

AMERICAN
DENTAL
JOURNAL

WOLFE & CO.

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1907

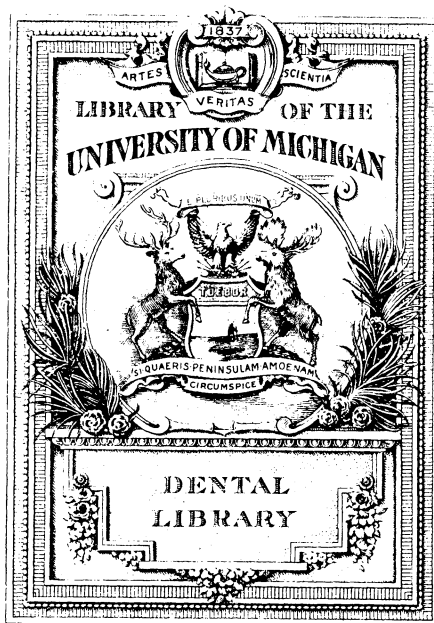
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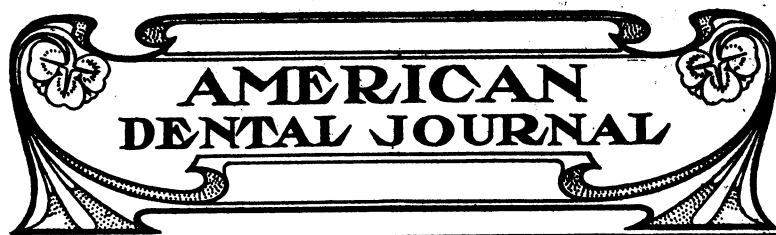
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PUBLISHED ON THE FIRST OF EVERY MONTH

Vol. 6.

DECEMBER, 1907.

No. 12

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LISTERINE TOOTH POWDER

A fourth of a century of continued, satisfactory employment of Listerine has demonstrated to many who have used it during this entire period, that Listerine is the best antiseptic for daily employment in the care and preservation of the teeth. Listerine Tooth Powder, then, is not intended to supplant Listerine in the daily toilet of the teeth, but is offered in response to a popular demand for a frictionary dentifrice to be used in conjunction with this well-known and time-tried antiseptic.

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The simplicity of its formula, in itself commends the powder. The English precipitated chalk and magnesia are the finest obtainable, and absolutely free from grit; the oil of cananga possesses properties opposed to inflammatory conditions of the gums, and together with the antiseptic constituents of Listerine, adds to the desirable qualities of the product. However, it is to the list of articles which have been omitted from the formula that special attention is directed, and the manufacturers believe the profession will agree that the absence of pumice stone, cuttlefish bone or other abrasive substances, and of sugar, orris root or superficial perfume of any character (the usual ingredients of tooth powders and liable in themselves to fermentative action in the mouth), is a distinct advantage.

Lambert Pharmacal Co.
St. Louis, U. S. A.

OUR POST GRADUATE COURSE

OPERATIVE DENTISTRY.

BY R. B. TULLER, D. D. S.

CLINICAL PROFESSOR OF OPERATIVE DENTISTRY, CHICAGO COLLEGE OF
DENTAL SURGERY.

CONCERNING DESENSITIZING AND EXTIRPATION OF PULPS OF TEETH.

The removal of pulps of teeth, unless they may be already dead from some cause, involves some method of desensitizing or devitalizing before removal is attempted, at least if the operation is to be devoid of the most excruciating pain.

The removal of pulps is sometimes the easiest and sometimes the most difficult and perplexing operation that the dentist is called upon to perform.

In these later days, by the use of cocaine to desensitize, it is not an uncommon thing to remove the pulp from single rooted teeth in from 3 to 5 minutes. And further, if the conditions are right—hemorrhage controlled, etc.—the root may be filled in another ten minutes.

On the contrary, other cases are frequently met with that, for some reason not always understood, cocaine being confined in contact with the exposed pulp and under pressure, seems to fail to produce the desired effect at all, or only after long and perplexing effort.

Exposed pulps are found sometimes that will seem to tolerate the necessary pressure, and yet on removal of the application, are as sensitive as ever. These will generally yield after repeated efforts, but occasionally exhaust the patience of both the operator and the patient. The satisfaction, however, that the dentist gets in the ease with which a great number of pulps are brought under subjection, so that extirpation is absolutely painless, gives cocaine an important prominence in the dental armamentarium of today.

In these stubborn cases there is a heroic and yet humane way of getting action sometimes, but in recording it the writer leaves it to the judgment of the operator to use or not. Every practitioner knows that the quickest and most human way to reduce an unbearable "jumping" toothache is to puncture the pulp and deplete the highly congested condition. That puncture, however, causes a few more severe jumps or throbs worse than before, before relief sets in.

Now, with a stubborn case where cocaine and pressure are applied to an exposure, and abandonment may be in mind, it may be found that one quick sudden thrust will send the cocaine home; and, differing from punctured pulps above referred to, the pain is over with in the one single sharp twinge. When this heroic measure is decided upon it may be done by using the automatic plugger, beginning gently and increasing the pressure until the blow is struck. Of course there is shock in this procedure and while it may be advisable in one case it may not be in another. Puncturing a pulp also overcomes the resistance in some cases. These things, while paradoxical as concerns a painless method, the exigencies of the case often demand.

The application of arsenic is not by any means a painless method in many cases, and puncturing of the pulp is often first resorted to, to insure the pulp remaining quiet during the first few hours with arsenical dressing. Cocaine, even if not altogether painless in these exceptional cases, reduces the time involved in getting rid of a pulp, to minutes against days as concerns arsenic, which even then often fails in complete devitalization.

The procedure in case of arsenical application is so well known that it is unnecessary to describe it here, except to say that some operators, for reasons unknown to the writer, first benumb the pulp with cocaine and then apply arsenic. When the pulp is desensitized why not extirpate without using a rank poison and waiting from at least twenty-four hours to two and three days?

Some years ago the writer in experimenting with so-called pressure anaesthesia, discovered that a cocaine solution could be made to traverse the entire length of dentinal tubules from enamel to pulp as readily as it could be made to penetrate an exposed pulp; and with more certainty of action, and more certainty of being painless, and absolute certainty of carrying no infection from the cavity of decay if this cavity was ignored and a special small opening was made

through the enamel at some other point into healthy dentine, and the cocaine, confined and under pressure, was applied at that point. The results of these experiments were given publicity at that time in a paper read before the Odontographic Society of Chicago and were later published in the *Dental Review*.

Following the publication of that paper several inventors produced, almost simultaneously, syringes of high pressure to be used in the specially made small hole through the enamel. The writer has accomplished all that was desired in many cases without a syringe and also with an ordinary syringe which was simply made with packing tight enough to not allow the solution to leak out under pressure, and with a point made tapering to tightly fit the special hole in the enamel.

Now, to apply cocaine through such a specially made opening without a syringe, it may be easily done as follows: Take a bit of pink gutta percha, warm it and roll it into a little ball, pinch it into a flattened shape like a small shirt button, and make a hole through the center about the size of the hole in the enamel or a little larger, possibly, and after drying the tooth about the hole so that the gutta percha will stick, warm it a little and press it down on the tooth around the opening. The opening in this and in the enamel makes a sufficient chamber for the cocaine solution which may be put in with a few shreds of cotton or a bit of spunk, or any other way to fill the hole full. Now it is only necessary to *slightly* warm an instrument of suitable shape to cover gutta percha, pick up another bit of gutta percha, warm it, cover the opening, and press with some force, holding possibly a minute.

If this does not carry the cocaine to the pulp it will be evident by exploring the cavity of decay, when the special opening can be painlessly made a little deeper to hasten matters and the operation repeated.

In this connection the writer will repeat what he has stated several times: that cocaine can be made to enter a tooth, when confined and under pressure, wherever the dentine has been recently uncovered, as for instance in grinding a cusp down until the dentine is exposed. Here would be a flat surface instead of a hole, but with a substance like gutta percha or unvulcanized rubber a chamber for the cocaine can be made, as described (and only a minute quantity is needed when

it is absolutely confined) and pressure applied with a suitable instrument, or even with the finger in some instances, the cocaine can be driven in. If gutta percha is used, it, of course, must be made just soft enough by a *little* heat to yield.

Instead of sticking either of these substances on the tooth around the special opening they may be formed into a small cup on the broad flat end of an amalgam plugger, and the cocaine introduced on cotton, and then applied to the tooth. The late Prof. W. D. Miller, in his experimenting some time ago along this line, determined that hand pressure, or finger pressure, was all that was required to force cocaine into the dentine if it was properly confined in contact with the dentinal tubules. While some form of syringe might be more convenient for the operator to use in the specially made opening through the enamel—not necessarily one of high pressure—no operator need halt on account of being without a syringe that would fit said opening. It should be remembered that the pressure one can put on the small surface of exposed dentine with an instrument in the fingers, amounts to several hundreds of pounds to the square inch.

Syringes may be loaded with enough cocaine to anesthetize a hundred pulps, and if too much is forced into and through the pulp to the tissues, possibly, beyond the apex of the root, detrimental results follow. And if the cocaine is simply used to obtund the pulps temporarily for the purpose of painless filling, the life of the pulp is no doubt endangered by injecting too much.

This paper is dealing, however, with extirpation of pulps, and if cocaine surcharges the pulp no damage is done. If a little goes beyond the end of the root (which is not so likely under hand pressure), there may be some soreness at that point as a result; but nature seems to exercise recovery in a day or two if not sooner.

It is an established fact that an exposed pulp that will not yield to cocaine at the point of exposure sometimes will yield if applied to an opening made near the neck of the tooth. Pressure anaesthesia has been complete in an upper molar when the application was made through an opening half way up a partially denuded palatine root. Secondary dentine deposited in the coronal portion of the pulp chamber often defeats pressure anaesthesia, and may perhaps be avoided by going in at the cervical.

Coming now to extirpation, there is little difficulty in removing

a pulp from a tooth with a single root, for such roots are usually quite round or at least not constricted as are some flattened roots, with pulp more like a ribbon with corded edges than a round cord.

However, the mistakes made sometimes, and causing trouble, is taking for granted that incisors are always single rooted and bicuspid with but two at most. The writer has in his possession a number of superior bicuspid with three distinct roots and one lateral incisor with two well defined roots about equal and distinct from each other. These are rare occurrences in nature, but they do occur; and four roots are sometimes found on first and second upper molars, and as high as five on upper third molars. In removing pulps, of course, it is very essential to success to find all the roots.

Practitioners generally know all about barbed broaches, and know too well that the best obtainable will sometimes break off in a canal, with a certainty in some cases that the broken part cannot be gotten rid of short of chemically destroying; or in other words, causing it to rust out. This takes considerable time usually. The best way to avoid breaking barbed broaches is to not use them. But they will be of course. In that case simply do not use them where they do not push to place easily and turn without binding. In the nature of things a barbed broach is weakened from the cutting, and possibly may be already partially fractured.

To look at a barbed broach and feel its extremely sharp spurs, one can hardly conceive that when thrust in along side of a pulp and twisted it could come out without catching and bringing the contents; but every practitioner knows that he frequently has to fish for some pulps a long time unless he knows what to do to better the premises.

If a pulp is tough, leathery and *wet*, it may escape entanglement with any broach for some time; but if it is deprived of its moisture, which may be done with absolute alcohol or chloroform (both absorb a certain amount of water very quickly) it may be more readily grasped.

There was a time not so long ago when the dentist had to make his own broaches, barbed or otherwise, or buy jeweler's broaches and modify them to his own wants. Jeweler's broaches are, some of them, soft and some tempered. The soft ones are easy to barb, but the tempered ones must have the temper removed. The tempered ones

are generally made three sided and of excellent quality of steel, and are much cheaper than broaches specially made for the dentist.

A three cornered broach will hold a little cotton twist on its point without readily loosening until the operator desires. To extract a pulp with this broach, it being smooth, just about half a dozen threads of cotton should be twisted on to it, and thus armed "dry" pulps will usually quickly entangle and surrender.

The nerve bristle with a minute hook on its hair-like extremity is also a desirable thing to have. There are some roots it will not pass into readily and thus exclude its use, but many dentists lean heavily on this hooked bristle. Passed into a root with its hook flat against the walls, it readily takes hold when one turn is made.

If anything breaks about this broach, it is this little hook, leaving a piece of no consequence behind, because it will be picked up by pulp when it comes away, or with the cotton when the root is wiped out.

This hook, manipulated properly, in flattened roots like those of lower molars is useful to bring away the web between the two larger openings. When the hook is gone, another may be bent on, or the bristle may be used straight to explore canals with, to carry dressings with and to pump chloro-percha to the extremities.

There are several kinds of spiral broaches made for dentists and all very useful. Some of them fail to get the pulp without a twist of cotton threads to entangle it. Some of these broaches are made spiral when manufactured by simply twisting a square or three cornered wire; but the real spiral broach is spiral like a cork screw. It is very difficult to make these cork screw spirals small; hence they can only be used in roots rather large and round. In such roots they are twisted in and encircle the pulp and are very sure to bring it away.

The twisted broaches are some of them tapered as well, making a tapering sort of a gimlet, but excellent for many purposes. They are fine to carry cotton in wiping out canals without danger of coming off until desired, when a backward twist, while holding cotton between thumb and finger, releases it.

DENTAL PATHOLOGY.

BY GEO. W. COOK, B. S., D. D. S., CHICAGO, ILL.

DEAN OF DENTAL DEPARTMENT, UNIVERSITY OF ILLINOIS; PROFESSOR
OF BACTERIOLOGY AND PATHOLOGY, UNIVERSITY OF ILLINOIS.

Respiration is the sum total of the processes by which protoplasm gains oxygen and gets rid of the carbon dioxide it produces as a result of its activity. In the multicellular organism as in the higher animals, it includes all those processes by which the ultimate elements (cells) of the body gain the oxygen necessary to maintain life phenomena and get rid of the carbon dioxide (CO_2) resulting from life phenomena.

In the higher animals special arrangements are necessary for the carrying out of these processes, viz., the organs of respiration. In so far as the work of the special organs of respiration are concerned the processes are *mechanical* and *physical*.

The trachea (windpipe) which communicates with the external air through the nose and mouth, divides below into innumerable branches which end in bronchioles, each bronchiole breaks up into several wider passages or infundibula, the walls of which contain pockets or alcoves (alveolar air-cells).

The walls of the alveoli or air-cells consist essentially of a network of elastic fibres continuous with a similar layer in the infundibula and bronchioles, and is covered on the side next the lumen or outer side by a single layer of large clear epithelial scales or cells.

The quantity of blood which traverses the lungs bears no relation to the amount required for their actual nourishment. This blood is not derived from the devitalized (?) blood of the right ventricle, but is obtained directly from the aortic system by the bronchial veins into the systemic venous system. *This blood supply to the lungs has nothing to do with the processes of respiration.* The venous blood sent out from the *right ventricle* through the pulmonary artery, which artery breaks up into innumerable branches forming a dense capillary network around the alveoli or air-cells, and finally forming the pulmonary veins, has nothing to do with the nourishment of the lung tissue, but is wholly concerned in the act of respiration.

From this short description of the lungs one can readily under-

stand the *mechanical* part of the organs of respiration. The mechanical part is simply (if it were spread out) a thin membrane consisting of a single layer of epithelial cells on the air side, and a dense capillary network of blood vessels on the inner side, and is simply a mechanical device for bringing the oxygen of the air in contact with a large surface of a diffusible animal membrane.

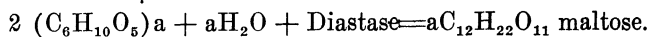
The *physical* part of respiration consists in the well known physical phenomena of the diffusion of gases whereby gases will pass through animal membranes according to the law of the partial pressure of gases. Here the oxygen of the air passes through the single layer of epithelial cells into the blood, and the CO_2 which is held under pressure by the blood passes in the opposite direction into the alveoli of the lungs. This comprises what is usually called external respiration.

Internal respiration, or the interchange of the oxygen taken up by the blood and lymph in the passage through the lungs on the one hand, is not a physical process, but is more properly a physio-chemical process. Here the cells of the body take up oxygen from the air, not according to any physical law, but a chemical union is formed and gives off CO_2 to the blood, not according to the laws of the dissociation of chemical compounds. Here comes in a very important, as well as a very complex, biological chemical problem. Oxygen diffuses into the blood and lymph. An unstable chemical compound is formed with the oxygen and the blood proteids called oxy-hemoglobin (HOO).

The cells of the body have the power to dissociate the oxyhemoglobin (HOO) compound and appropriate the oxygen and leave behind reduced hemoglobin which has the power to unite again with the CO^2 of the cell forming carbon dioxide hemoglobin (CO_2HO). So internal respiration consists of a double chemical reaction between the oxyhemoglobin of the blood and the cells of the tissues. This action is brought about or stimulated by the "contact action" (fermentation chemical process) of the living animal cell. As in all chemical actions an equilibrium is maintained, that is, the chemical reaction never goes on to its ultimate end, but only goes to a certain point where the new chemical compounds formed begin to change the conditions under which the *primary chemical* action began, and thus stop the further progress of the action or cause it to revert to its

former condition. This phenomenon is especially common in the chemistry of fermentation, or the chemistry of living organisms which have the power to dissociate chemical compounds. It is no doubt true of all chemical reactions. For example, we might mention the action of diastase in plant physiology. Diastase is a constituent of the germinating part of all seeds. When it comes in contact with starches it produces the following change:

starch



But all the starch is not changed to maltose or dextrose, only a certain per cent. When the maltose or dextrose accumulates to a certain point it changes the condition of the solution so that the diastase acts no further, and if increased beyond this point it has a tendency to revert to starch again. This is one of the great principles of living chemistry and is so imperfectly understood at present as to render it impossible to express our ideas on the subject.

We shall try to see how the same principles apply to the phenomena of digestion. *Digestion* in the widest sense is the sum total of the processes by which the *food-stuffs*, as taken from the plant and animal, are prepared for absorption and their further *fate* in relation to the chemical changes of the tissues and their excretion as waste products by channels other than the lungs.

In the higher animals we have special organs to carry on external respiration; in like manner we also find special organs for the process of *external digestion*. By external digestion we mean those chemical changes induced in the *food-stuffs* by means of *ferments* or *enzymes* necessary for their absorption or passage into the body proper. The special organ for the carrying out of these processes is the alimentary canal; just as the lungs are the special organ for carrying on the mechanical and physical part of *respiration*.

The alimentary canal is a muscular tube which begins at the mouth and runs under various names, viz., pharynx, oesophagus, stomach, small and large intestines and rectum, and ends at the anus. It communicates with the external world at both ends, and its lumen is in no wise inside of the body.

	Body cavity.	
Anus.	Alimentary canal.	Mouth.
	Body cavity.	

Therefore all chemical changes in the *food-stuffs* which take place in the alimentary canal are outside of the body, hence the term *external digestion*. As the lungs are simply an apparatus to facilitate the interchange of gases between the external air and the internal fluids of the body, so the alimentary canal is simply an apparatus in which such chemical changes in the *food-stuffs* can be brought about as to facilitate their passage through the intestinal walls into the body proper. These changes are *purely chemical* and are brought about through the agency of ferments or enzymes. These are bodies found in all plants and animals which by their presence or contact with other chemical substances are capable of inducing certain chemical changes in the bodies with which they come in contact without themselves being changes. Also the amount of the change is wholly out of proportion to the amount of the enzyme acting, so that a small quantity of the food stuff acted upon.

Thus we find all along the alimentary canal glands which secrete these enzymes; each different enzyme produces its own specific chemical change. The common action of all these ferments is to dissociate or *bring into solution*, the food-stuffs so they may pass through the walls of the intestinal canal. For the physical forces, diffusion and *osmosis* can only act when substances are in solution, and these forces are called into play in the processes of absorption. The first of these enzymes we meet with in the intestinal tract is contained in the secretion of the salivary glands and is called *ptyalin*. It is a non-organized ferment, i. e., it is the product of living cell but has no living properties itself. Its specific action is on the *food-principle* commonly called "carbohydrate."

A similar ferment is also secreted by the pancreas and in the enteric juice of the intestines, viz., the maltose, *lactose* and *invertin*, all of which have the power to convert starch into maltose and dextrose in which form the starches are absorbed. The following equations will illustrate the process which is essentially one of hydrolysis:

$(C_6H_{10}O_5)_n$ ptyalin, maltose, lactose or invertin

(Starch) $(C_{12}H_{20}O_{10})_{54}$

(Insoluble) (Amidulin or soluble starch.)

$(C_{12}H_{20}O_{10})_{54} + 3H_2O$ (enzymes) $(C_{12}H_{20}O_{10})_{17} + C_{12}H_{12}O^{11}$

Amidulin or soluble starch. erythrodextrin.

$3 (C_{12}H_{20}O_{10})_{17} + C_{12}H_{22}O_{11} + 6H_2O$ (enzyme) $9 (C_{12}H_{20}O_{10})_5$

$C_{12}H_{22}O_{11}$ Achrodextrine.

9 $(C_{12}H_{20}O_{10})$ 5 $C_{12}H_{22}O_{11}$ 45 H_{20} (enzyme 54 $C_{12}H_{22}O_{11}$

Maltose.

All these changes are due to the taking up of water. In the form of maltose all the carbohydrates are taken into the body and appropriated by the cells of the body. It is one of the diffusible forms of sugar.

In the like manner the next great food principle is dealt with, viz., the proteids or albumins. The digestion of the albumins take place in the stomach and small intestines. Here the chemical changes are induced by the pepsin of the gastric juice, and the trypsin of the pancreatic juice. The former acts best in an acid media, the latter in an alkaline media. While we cannot trace these changes so accurately as we can the digestion of the carbohydrates, owing to our lack of knowledge of the chemistry of the proteid molecule, the whole change seems to be one of solutions. That is, under the influence of dilute Hcl and pepsin, colloids, such as represented in plant and animal proteid matter, are transformed from the solid gelatin state to one of solution. In this latter state they readily pass through the intestinal walls into the body.

If we place some solid fibrin in a 0.2 per cent Hcl and add a little pepsin and keep it at a temperature of 40 C the solid fibrin soon swells up and becomes translucent and then passes into complete solution. The steps seem to be as follows: *Albumin*, *Acid albumin*, *albumoses*, and *peptones*. In the presence of the trypsin of the pancreatic juice the results are the same, viz., peptones, except that trypsin is capable of splitting up the peptone into amido-acids, viz., leucin $C_6H_{11}(HH_2)O$ and tyrosin $C_9H_4(C_6H_4OH)NH_2O_2$. Here we have the successive steps: Albumin, alkali albumin, albumoses, peptones—(leucin-tyrosin). The chemistry of these two processes, viz., peptic and tryptic digestion, is one of the electric dissociation of the proteid molecule with the taking up of water in each case. This dissociation is carried on to complete solution or to the peptone stage.

This principle was demonstrated by Hardy, and also by Matthews in their work on the dissociation of colloid cells (?) in the presence of dilute alkali and acid. It is further shown that bacteria have a similar liquifying influence of colloid substance.

The third food principle, viz., fats and oils, is dealt with in like manner by being split up into glycerine and their respective fatty acid and as such pass into the body.

So much for external digestion or the processes by which the body, by means of *self secreted* enzymes, reduces the food--stuffs to a state of solution fit for absorption, just as some forms of bacteria reduce gelatin to a state of solution by its enzymotic action.

Internal digestion as in respiration is the interchange between the products of external digestion after they have entered the blood and lymph and the individual cells of the body. The processes here are somewhat the reverse to what take place in the alimentary tract. In the tissues the liquified colloids of intestinal digestion are again built up into tissue substance. The maltose and dextrose of the starches are partially stored in the body as glycogen $(C_4H_{10}O_3)_n$ and the glycerine and the fatty acids are again united as triglycerites. The parts that are not used to restore body tissues are further broken up into $CO(CH_2)_2$ (*urea*) and CO_2 as the result of work. So here again, just as in respiration, the interchange results in waste substance which in the case of respiration is CO_2 and in the case of internal digestion $CO(CH_2)_2 NH_3 CO_2 H_2O$.

Thus we must conclude that all digestion is a chemical process due to the self secreted enzymes of the body. *No outside agency is necessary.*

But such a normal condition of affairs cannot exist. The earth is full of microörganic life. Nature is full of bacteria of all kinds, many of which have a similar chemical action to the animal ferments, i. e., they can split up chemical compounds into various substances. As, for example, certain fungi, as the yeast, can change glucose $C_6H_{12}O_6$ into alcohol C_2H_5OH . $C_6H_{12}O_6$ yeast $2C_2H_5OH CO_2$. Also by the action of bacteria on solution of carbohydrates, lactic acid is formed, and fats are in a similar manner split up in fatty acids and glycerine. This action on fats is commonly spoken of as butyric acid fermentation. Further by the action of bacteria on proteid matter all kinds of ammonia compounds may be formed, some of which are very poisonous, viz., putrocine, tyroleucin, etc. These products are chemical bodies termed ptomaines or toxins.

As the intestinal canal communicates with the external world, it is necessarily more or less full of bacteria, most of which are harmless, but their presence must in part be looked upon as an unavoidable

evil which the individual must endure, and the evil effects of which must be contended against. Proteid matter and especially the products of intestinal proteid digestion, forms a most favorable media for the growth of these bacteria, and consequently for the elaboration of these toxic products. Among the more important and bacterial products in the intestines might be mentioned certain amido-acids, as *phenol*, *indol* and *skatol* and also *tyrosin*. These are all absorbed and unite with the sulphuric acid of the body and are finally excreted by the kidneys as *conjugate sulphate*.

Besides these, numerous ammonia compounds may be formed. Also bacteria acts upon the fats in the intestine and form certain fatty acids, viz., *butyric* acid, which is the acid in rancid butter, also lactic and propyonic acids are formed by bacteria in the stomach, and especially in the mouth. All of these are not only unnatural, but also hurtful when absorbed into the body. Aside from the mouth, the large intestine is a most favorable haunt for bacteria which act upon the feces, forming aside from CO_2 and CH_4 many sulphur and phosphorus combinations with nitrogen which are also absorbable.

When noxious gases CO_2 , NH_3 , SO_2 , etc., are inhaled by the lungs, they enter the blood and internally act deleteriously on the body cells, upsetting the normal processes of respiration; so also these bacterial intestinal products when absorbed may act in a similar manner on the body cells hindering the normal processes of internal digestion, and often by their irritating action produce inflammatory changes in the tissues. The symptoms produced by the absorption of these products have been termed auto-intoxication or sickness originating from within. But this conception is a misnomer. If gases of bacterial originating in a cellar are inhaled, they may cause sickness, but it would hardly be an auto-intoxication; so bacterial decomposition products originating in the intestines and absorbed may, and often do, cause disease, but such a sickness is not from within. Many bacteria form specific products, as, for instance, the lactic or butyric acid bacillus or the bacteria forming indol or phenol. When butyric acid is absorbed it produces specific symptoms, or when phenol is absorbed it produces specific symptoms, just as the diphtheria germ may invade the throat of a child and elaborate a toxine setting up a specific disease or set of symptoms. Hence we have the specific nature of infection or disease which in all cases is determined by the specific chemical toxines elaborated by the *bacterial cause*.

ORIGINAL CONTRIBUTIONS

TOOTHsome TOPICS.

BY R. B. TULLER.

I have known in my time some Christian Science dentists, and believe there are several now in the city.

Just what their method of practice is I do not know; nor where they cut out dental science or leave it in.

I think they have a full line of instruments, except forceps, lancets and nerve instruments; but on nerves, dead or alive, they practice Christian Science, and throw all drugs out of the window.

One Christian Science dentist, whom I knew very well and visited in his office, I know followed that plan. He filled teeth, no matter in what condition as regards pulp or no pulps, but never treated or filled roots. Christian Science took care of all that, so he said, and he never had any trouble.

A neighboring dentist, however, told me that a good part of his (the neighbor's) practice was treating toothache and abscesses that came from the Christian Science dentist. He said a dyed-in-the-wool Christian Scientist would patronize the Christian Science dentist faithfully at first, but when in trouble with painful pulps and putrescent roots, they would come to him on the q. t. ashamed to admit by going back to their own dentist, that Christian Science dentistry was a failure. They, most of them, could not stand misery and torture; for some of the fillings were put in directly on exposed pulps, in faith that Christian Science would take care of those pulps if it did not the enamel and dentine.

When such unfortunates as had such work done did not come back howling, my Christian Science friend was most surely convinced that his faith, and their faith, had made things all O. K. These same patients would faithfully return for other work, but never acknowledge having had any suffering, or visiting another dentist.

Dentistry—dental science—seems a pretty good test for Christian Science. I had a neighbor who was strong in that faith. All the same she came hopping up my steps two at a time at dawn one

a. m. and rang my bell with vigor. It was, "Oh, doctor, do something for me quick—*quick*. Such a *jumping* toothache!"

Well, I did it. I found an exposed pulp in plain view. It was highly congested and I could see it throb with each pulsation. I took a sharp explorer and punctured it.

"Wow! *wow!* wow! Oh! my goodness! don't you do that again!" she cried.

"No," I said, "I don't want to." But I could not refrain from saying, "Now, Mrs. *Psyke*, that did not hurt. You only *think* so."

"Oh, shut up!" she exclaimed. "I guess I know! Christian Science has nothing to do with teeth."

And I'm very much of the same opinion. I applied dental science (cocaine) and extirpated the pulp without further pain, and filled the roots.

Christian Science believers are very nice patients to work for, and that's where it helps wonderfully; for they brace up and smile serenely when I believe it hurts. It enables one to do his best work.

And then you don't have to bother about sterilizing—well, yes, you would, of course, through force of habit.

I had one who declared that she had filled her own teeth with nature's own material. I, however, had made her two plates. The upper was a full set. The lower all but the six anterior teeth. It was them that she had filled and preserved.

She told me of a woman who burned her hand and arm "to a crisp," one day, and she treated her in the evening, put her into peaceful sleep in a little while, and the next morning she was up doing the family wash as if nothing had happened, and there was no signs of the burn.

She told me she, as a regular healer, had a young man under her treatment one evening, who had been unable to walk or work for some time on account of necrosis of some bone in his leg; and that physicians had counseled and said an operation to chisel away the diseased bone must be performed, and he was to go to the hospital the next morning for that treatment. A friend had called her at the last moment. She treated him that evening, and the next morning, instead of going to the hospital he got up, took his dinner pail and went to his work.

Now, it was my time; and so I told her of my own case. I, too, had been burned horribly by the explosion of a can of gasoline

which saturated me with the burning fluid, and my clothes were all burned off of me. I was entirely alone and no help was near. Nothing could be done anyway, and I simply gasped and shrieked and became unconscious. My last thought in my agony was: This is the end.

She was listening intently and with animated, eager interest. "But it was n't the end," she exclaimed, "for here you are sound as ever, so far as anyone can see. You are not a Christian Scientist yourself, but you must have been treated by one. No medicine of man's concoction would have brought you through that!"

"No," I said in a very deliberate way. "I have never made any profession of faith in Christian Science, and no one so far as I know treated me; but when I came to there was n't the sign of a singe about me. I could not believe it. My clothes were gone, but I seemed to be without a sign of a burn."

"Well, I'm sure that while you were unconscious, some healer found you or knew of your mishap in some way and treated you," she confidently asserted.

I said, of course, it was possible, but I was sure it was absent treatment if done; for I found myself exactly where I had lost consciousness, and I was satisfied no one had been near me. I simply awoke with feelings of great relief to find myself alive and entirely whole. I could hardly believe it until I had looked at my hands and rubbed my eyes, and felt my face and stretched my limbs. I was sure my face must be black at least and my hair and brows singed, and I lifted myself up and looked in a glass.

My hair was tousled, my eyes rather sleepy, and I needed a shave; but there was not a mark of fire about me.

"But, your clothes were gone; and other things, I suppose, showed some signs of the blaze. 'Twas a wonder the whole place did not burn," she said.

"Oh, no," I said, "my clothes hung on a chair and the room was all in usual order."

She looked at me in a kind of quizzical way, and then I said: "I'm the man you read about in the Daily News, who eats the rare-bit. You know how proverbial they are for horrid dreams?"

She jumped up, and with some indignation accused me of stringing her. She did not say "stringing," but that is the pure English of what she meant.

Then I said some nice things to avert the storm; and I said I was just wondering, when she told me about filling her own teeth, the burnt hand and the necrosis, if she hadn't been unwise in her diet, like myself.

She then said I was trifling with her sacred belief and ridiculing her. "The idea," she said, "of you telling me all about being so badly burned, when it was n't so at all. I don't thank you to trifle with me that way!"

"Well," I said, "you say that all our pains and ailments are imaginary; they are not real if we will only think so; and," I said, "I do think so. I was mighty glad to wake up and find my horrible experience was but a dream."

She looked at me in silence for a few moments and then said, "You ought to be a Christian Scientist. It is the only real thing there is. But I must go. I came in to get a bottle of that mouth wash of yours for sore gums. Thanks. I'm going to lend you my Science and Health. Good afternoon."

Speaking of Christian Science reminds me of a story:

In a crowded hall, where a lecture was to be given, while the people were waiting for the lecturer, a man arose and asked: "Is there a Christian Scientist present?" A very self-possessed lady arose and said, "I am a Christian Scientist."

"Pardon me," said the man, "but I am sitting in a draft and thought I would like to change places with some one who wouldn't take cold."

"THE FORMATION OF TARTAR."

Fermentation is a name given to a peculiar and interesting class of decomposition which has long been known, but which differ altogether from the ordinary chemical action. The value of fermentation was recognized many, many years back—as far back as history gives any record.

So we see that the known value of ferments dates many centuries back; still it has been within recent date that we have come to know and understand this process of fermentation.

Careful investigation has shown that two distinct kinds of ferments exist; one of these consists of *living organisms* in the form of microscopic fungi called organized ferments. The other ferment is the non-organized or enzymes. Of these two classes of ferments I

will bring in this article only the organized or microscopic fungi.

There are many different organisms which may bring about a fermentative process. These are the alcoholic fermentation, brought about by yeast (*saccharomyces cerevisiæ*); the lactic fermentation by lactic acid bacillus; although very many different bacteria are known which possess the faculty of converting carbohydrates into lactic acid; the third which produces the acetous fermentation (*mycoderma aceti*).

Since the discovery of a great number of microscopical organisms in the human mouth, repeated efforts have been made to make them responsible for the formation of tartar. Many different theories have been advanced. I have been experimenting for over a year on this subject and the process and result of my research is as follows:

I have not the apparatus I would like to have with which to conduct these experiments, but nevertheless here are my conclusions up to the present. Others may take them up who are better prepared. It is a recognized fact that the calcareous deposits about the teeth come from the lime salts contained in the saliva. But how and why are they precipitated and deposited about the teeth has been the question often asked.

It is another recognized fact that different fermentative processes take place in the oral cavity, also in different places in the body. And my belief is that through the process of alcoholic fermentation tartar is formed and precipitation and deposit takes place.

Through the process of fermentation brought about by the yeast plant of an aqueous solution containing calcium salts, the calcium salt will be precipitated.

The composition of normal saliva is given as containing (by Frerichs) :

Water	994.10
Solids: Ptyalin	1.41
Fats	0.07
Epithelium and proteids	2.13
Salts: Potassium sulpho cyanate, sodium phosphate, calcium phosphate, magnesium phosphate, sodium and potassium chloride	2.29

1000.00

Take a solution or lime water, made by dissolving calcium oxide or calcium phosphate in distilled water; I have used calcium phosphate, for it is found that it is phosphate of calcium which is in the saliva. (The salts of calcium are feebly soluble in water.)

Now add to this lime water a syrupy solution of sugar, then some yeast plants (as pure a culture as can be obtained). Be careful to have all solutions as clean as possible and a pure culture of yeast plant. Bottle in a nice clean bottle and cork. Shake the solution to thoroughly mix the ingredients and set in a warm place of about 98 degrees and while preparing this bottle of calcium sugar, yeast plants and water, prepare another, omitting the lime water, and use only the sugar, yeast and water. Now, after some time—a couple of days—notice the result in the different bottles.

The result will be fermentation in both solutions and the one bottle prepared with the lime water will have a precipitation, while the bottle not containing the calcium will not have a precipitate. Here is the chemical reaction of the formation of tartar: Cane sugar, $C_{12}H_{22}O_{11}$ Water $= H_2O$ Calcium Phosphate $= Ca_3(P O_4)_3$ yeast $=$ *Saccharomyces cerevisiae*. Then $C_{12}H_{22}O_{11} + H_2O + Ca_3(P O_4)_3 = C_2H_6O + Ca_3(P O_4)_3 + C O_2$.

As I have stated I am poorly equipped for such investigations but others may take my idea and carry them through, for I feel certain that through the action of fermentation the precipitation of tartar is brought about.

Respectfully,

St. Cloud, Minn.

JOHN LOUIS HELMER,

TRIMMING MODELS.

I am uncompromisingly opposed to the accepted system of scraping or trimming models or impressions, other than putting bead on plate, which will be described in answer to next question. There is always sufficient resistance in soft tissue to float plate if it has been unduly compressed or trimmed away. A better method, which I have never found it necessary to resort to, is to lay tin or lead foil on model where the hard spots are located, but this foil should never extend to the edge of the plate, thus destroying the suction. One can add as many layers of foil as is necessary to suit the case. This foil follows the lines of the mouth and you know definitely how much you have changed it at each point.—*Dr. O. H. Simpson, Western.*



ABSTRACTS AND SELECTIONS.

ORAL HYGIENE IN OUR PUBLIC SCHOOLS, ITS RELATION TO DENTISTRY AND HOW THE WORK WILL BE CARRIED ON.

BY DR. T. FRANKLIN GIFFORD.

For a number of years the dental profession has realized the necessity of proper instruction to the public in oral hygiene, the anatomy, nerve and blood supplies, functions of the teeth and adjoining parts and their relation to other parts of the body. The profession sees the need of short lectures in our schools, realizing from experience that many children's mouths are in such a filthy and unhealthy condition, teeth decayed, abscesses and mouth full of disease microbes, some of them being the most contagious and infectious. The cause of many children being dull in their studies can often be traced to bad teeth.

If the importance of correcting teeth defects at an early age was more generally recognized by parents and teachers, we would hear much less of the harmful influences of our schools on the eyesight of children, and the number who pursue the course to the end would be materially increased.

Many parents, though interested in the welfare of their children, in all other respects, neglect this most important duty, not appreciating the fact that a large number not up to the average in the class or who suffer from toothache, earache, sickness, weak digestion, St. Vitus' dance, epilepsy, headache and physical breakdown owe their ills to some defective tooth or teeth.

The correction of the refractive errors early in life will not only prevent disease, but by favorably influencing physical and mental development will sidetrack inherited tendencies.

It is a well known fact that many nervous wrecks, who are supposed to be invalids from inherited causes, have inherited only defective oral conditions, which, like those of their parents, have not been corrected.

The continued leak of nerve force from this cause and from the nightmare of the thought that sooner or later they will be compelled to surrender to the inevitable so reduces the nerve force that, if called upon to go through a great strain they collapse, when under other circumstances the trial may have strengthened them.

The following statement was made by an eminent German doctor, Myer, in a German medical journal: "The nervous diseases of school children is an interesting question from the point of view of one who has had exceptional opportunities to observe the frequency with which children are affected with nervous affections. One thousand eight hundred and fifty-seven school children were so examined, with the result that 130 were found to be nervous, which is 7 per cent, and out of the material of 1,068 that had never gone to school, 2.6 per cent were nervous."

In America the per cent is much higher. A statement has been published recently that out of the 162,000 school children in Philadelphia, 80,000 were nervous or had eye trouble, according to an article that I read in the *St. Louis Clinique* by Dr. S. S. Bishop of Harrisburg, Pa.

Doctor Darlington, Health Commissioner, of New York city, made the statement some time ago before the Academy of Medicine at Harrisburg that 40 per cent of the school children and 98 per cent of the truant children of that city were physically defective.

It does not fall within the province of the dentist or physician to sit in judgment upon the methods adopted by the teacher in the school; but when physical injury is likely to occur as a result of methods that are or are not employed, the medical and dental profession should insist upon the abandonment, or adoption of methods that will prevent injurious methods of school life.

For when we consider that the destiny of this nation will be committed to those who are now in its schools; that a happy and useful life, and a peaceful conscience depends upon the health of the individual, it is obviously important that every effort should be put forth to prevent physical degeneracy, and, as far as possible, sidetrack inherited tendencies during the years of physiological growth, which are the years of school life. A child should not be allowed to drift down the stream of life to physical insufficiency, but the teacher should come to his rescue in any moral, mental or physical defects which have been acquired or inherited, by piloting him up the stream to the hills wherein lies the hidden treasure of physical strength.

Education does not consist simply in the acquisition of knowledge. The great idea underlying all instruction should be to fit and stimulate the scholar according to his individual ability; this of course requires teachers of intelligence and discernment, to whom their calling is not merely a routine business; many who are well qualified for the moral and mental training of children accept the important responsibility with no knowledge of the physical condition, or whether a child is physically equal to the requirements of school life. The teacher should see that the book is held at the proper distance, in a good light, and a study of facial expression and head posture should be made. He should familiarize himself with the symptoms of the teeth, mouth, eyes, ear, nose, and throat defects, so that, while he cannot make a diagnosis, he *can* know when there is something wrong.

In many of the schools the medical inspector is employed to examine any child detected by the teacher appearing in an abnormal condition. The results of this work are beyond comprehension. Children should never be condemned or discouraged on account of any weakness, but should be encouraged by an extra effort being put forth to strengthen weak points. Much depends upon the way a child is started. It may be thought he has no turn for mathematics, but the sole trouble is that he does not see the figures correctly; some children with astigmatism cannot distinguish 3 from 5, 6 from 8 or 9, and consequently never have the correct answer to an example. A philosophic and intelligent dealing with this condition would prevent many from selecting a vocation in life which is distasteful, and which was chosen by them from supposed necessity; from this cause the shore of life is strewn with wrecks.

Many children are either under or over fed or are allowed to eat candy to excess; others live in unsanitary houses or are victims of unwholesome habits. Some are ambitious and pore over their books in the evening, often in a badly ventilated room and with a poor light, or rush to school in the morning without breakfast, or one swallowed in haste without proper mastication, and in consequence are not able to stand the strain of school life.

When a child enters school an estimate of his general strength should be made, for it is most important to remember that though the demand by work upon the muscles of the eye, may not be unreasonably great in itself, yet it may be altogether excessive in relation to the individual to whom it is made. Many children enter school in more

or less enfeebled health, and their work must be adjusted accordingly, or they will be condemned to the stern law of the survival of the fittest. Children having sore or inflamed eyes should not be allowed to enter school without a certificate from a physician to the effect that the disease is not infectious. Unless the child has a certificate stating that he is under the care, or has been treated by a competent oculist, the acuity of the vision should be taken by the teacher when the child enters school, or at any time when there is a suspicion of anything being wrong.

A child should be encouraged to form regular habits. The world does not depend upon the genius; nor should the prodigy in the class, who studies at the expense of his health for a popular applause, be set upon a pinnacle for an example to other pupils. Regularity of habit, work well done, promptness, cleanliness, should be the standard, and if a child falls behind, lacks ambition, is listless, is drowsy, has symptoms of defective teeth, eye strain or manifests any nervous symptoms, his parents should be urged to have him intelligently looked after and treated. Parents invariably feel grateful when interest in their children is manifested. I never knew one to object to, or resent an approach of this kind, unless it were done in a spirit of fault-finding or pointing out defects in a way that savored of criticism, ridicule or condemnation. Careful observation, intelligent care and treatment will amply repay the teacher, not only in increased learning capacity of the pupil, resulting in much less tax on the teacher's own time, patience and endurance, but he can enjoy the great reward of knowing he has helped to properly equip children for a useful life.

I believe the chief cause of nervous diseases in school children is defective teeth and abnormal oral conditions. No one can properly masticate with bad teeth and a child not being able to masticate properly produces abnormal conditions of the stomach, and, not developing as it should, becomes an anemic. The system being deprived of its normal functions, abnormal conditions will arise as peculiar sensations in the head, vertigo, nausea, dyspepsia, chorea, insomnia, epilepsy, hysteria, nervous prostration, insanity and general failure of health.

Ninety-five per cent of the people wearing artificial teeth are suffering from several of these conditions. Most all wearers of artificial teeth are regular contributors to the physician, suffering from what the patient claims, heart trouble, which is really stomach trouble caused by improper mastication and by improper insalivation, the di-

gestive organs are called upon to do excessive work; the nerves being the conductive power are called upon for an extra supply of current and by so doing takes what should go to the other parts.

The pneumogastric nerve, as we know, supplies the stomach, as well as the heart. By the increased movements of the organs of the stomach, we have an increased action of the heart, and by the long excessive activity of the heart's action, it becomes weak, as a worn-out machine caused by excessive use.

To the progressive dentist of today he sees the artificial plate gradually diminishing, he sees fewer extractions, but this is only within the radius of his practice. He looks further and sees the thousand who have not had the knowledge imparted to them concerning the value of their own teeth. How are we going to impart this knowledge? Through the schools is the only solution. Habits formed during childhood, whether good or bad, will continue through life. It is an old saying—train the child right and it will live right.

The dental profession in some of the states has tried to have appropriation made to take up this work, but has failed. There has also been an effort to give a certain number of lectures in the schools and to the public, but these attempts have also failed, owing to the lack of funds. Some state societies have made an effort by appointing a member from each county, as county examiner. The results from this cannot be claimed to be a success, as there are few in the profession who are fixed financially to warrant giving their time without compensation. Yet many dentists would do so could they afford it.

It is found, on investigation, that the dentist who was appointed by his society as county examiner has been the loser, not only in valuable time but in his practice as well; for the public has looked upon such a movement as a personal gain to the dentist to increase his practice, while the society has conferred the appointment upon him in order to benefit the public.

Dr. William H. Gelston, chairman of the Committee on Oral Hygiene of the Southern Dental Society (New Jersey), with his committee has been extremely active endeavoring to educate the teachers of our public schools. This same activity has shown itself throughout all the Jersey dental societies.

In Philadelphia, Doctor Fauth, I understand, has given a certain number of lectures in the public schools. With what results I have been unable to learn.

Dr. P. D. Houston of Lewisburg, Tennessee, in an address before the Tennessee State Dental Association, suggested the formation of a text-book on oral hygiene for use in the public schools and pleaded for an active campaign for this work in Tennessee. The results I have been unable to learn.

In New York city the medical profession, as well as the dental profession, realizing the defective condition of a majority of children attending public schools, has taken the lead in this work and has, through the Board of Health, been able to have medical examiners appointed, whose duty it is to visit the respective schools every morning at a stated hour and examine any child sent to them by the teachers for suspected contagious diseases. The inspectors exclude children found to be affected with such diseases and readmit them only after a second examination and after the premises, where the children live, have been disinfected. Nearly all epidemics have their origin in the school and the spread of contagious diseases among children usually takes place through the eminent association in which they are brought.

In 1901, in the Low administration, a corps of nurses was added to the corps of inspectors. The duties of the school nurses consist in promoting the cleanliness of the children and in treating minor ailments of the skin and eye under the direction of the inspector. The results are cleaner and healthier children. Through this agency one of the most dangerous forms of contagious eye diseases (trachoma) was greatly reduced.

The number of cases of trachoma in the schools of Manhattan Borough on March 31, 1905, was 17,710. A year later, on March 15, 1906, a careful census showed only 12,000 cases, according to Dr. Thomas Darlington, Commission of Health, under whose administration this new work was established.

I am indebted to Dr. John J. Cronin for notes taken on New York city, published in the April number of *The American Monthly Review of Reviews*; and into every home in the civilized world the April number ought to go, so that one can read the doctor's valuable article.

Of 99,240 children examined in the schools of the Borough of Manhattan from March 27, 1905, to September 29, 1906, 65 per cent needed some form of medical treatment; 30 per cent required correc-

tion of defective eyesight, in most cases by eyeglasses, and a still larger percentage needed dental attention.

It is exceedingly pleasing to know of the wonderful results they have obtained, yet the system comes far from being perfect, although efforts are being made to complete same.

The Board of Health, realizing the necessity of instruction in oral hygiene, has made arrangements for a limited number of lectures to be given at stated times in the New York schools. This is only a step in the right direction—they need to go further—and in connection with their medical examiners, dentists should be employed to examine the mouths from a dental standpoint and render such treatment as is required, as the mouth is the medium culture of millions of germs, both disease producing and non-disease producing, some of these being the most contagious.

In an editorial by Dr. Wilbur F. Litch, in May (1907) *Dental Brief* on "The Teeth of Children in English Elementary Schools," we find that recruiting statistics show a great majority of would-be recruits to be lads between 18 and 19 years of age and that of those recently presenting themselves for examination 75.32 per 1,000 were rejected on account of "loss or decay of many teeth."

A memorandum made by the British Dental Association shows that out of 10,517 school children, averaging 12 years of age, 1,508, approximately 14 per cent of the whole number has sound teeth, while among the remainder were found 37,105 unsound teeth, and a loss by extraction 2,174 teeth, presumably unsound; this making a general average of four unsound teeth for every child; an average which, in the absence of preventative measures, is certain to increase with a child's advancing years. Thus far New York is the only American city in which dental treatment for the public school children has been officially provided for. In that city a committee on "physical welfare of school children" has organized a staff of 20 dentists for school work, their services being for the present rendered gratuitously.

In Germany the movement is making far more rapid and satisfactory progress than in any other country. What has been accomplished in Strassburg and Darmstadt was the subject of editorial mention in the *Dental Brief* for August, 1906. In addition to these cities, Wiesbaden and Muhlhausen have instituted regular inspection of the teeth of the school children, and at Ulm, a dentist gives his entire time to school work. Austria is also moving in the matter, and in

Prague six school dentists have been appointed. No one familiar with the facts can doubt the important influence which the proper care of the teeth of school children in America must exercise upon their physical well being, and ultimately upon that of the whole American people. If systematic dental care is to become a fixed feature of the public school system, a campaign of education for those not familiar with the facts must be organized. It is a campaign, if prosecuted with zeal, persistence, and, above all, with discretion, cannot fail of ultimate success. To organize and so conduct that propaganda is the most important duty now confronting the dental profession.

The American dentist is looked upon as the leader in the field of dentistry. He is the ideal and shall we, after reaching the heights and receiving the honor and endorsement of the foreign countries—shall we, as American dentists, rest on our honors and allow our foreign brothers to take the lead in this work? I say, No.

If proper oral hygiene measures were resorted to, many children suffering from various forms of diseases, both contagious and infectious, would be alleviated from same.

It is proven by experience that the greatest suffering caused by defective teeth is during the school days; many a valuable hour is lost from the intense suffering wrought by decayed teeth, especially at the time the first teeth are giving place to the second. Habits formed during childhood are much easier broken while young than in adult life. The time to correct mouth breathing is in early childhood. Catarrhal conditions and adenoids (a soft growth in the vault behind the soft palate) are caused by mouth breathing. These should all be corrected in early childhood, as perfect breathing is one of the greatest secrets of perfect health. In perfect breathing we have the proper chest and lung expansion. This is a feature that is even less talked of and should come in the physical training of the child.

Dr. Thaddeus P. Hyatt of Brooklyn, N. Y., has been most enthusiastic in this line of work. In Brooklyn he has given illustrated lectures on "The Care of the Teeth" to the public. He has also gone into some of the schools in Brooklyn, with the assistance of other members of the profession, and examined some of the school children's mouth and the results of his investigation were astonishing. Out of 600 examined, there were only some 19 who did not need dental attention. In some of the foreign countries where this work has been

taken up, in examining the mouths of the school children, the percentage has been even greater.

In one of the cities of Ohio, several members of the profession got together and fitted up a place where each member in turn would go certain days of the week and give their services free to those who could not afford to pay for proper dental treatment. It is reported that owing to the lack of funds, they have not been able to carry on the work.

A crying need is felt by the profession and the public for an association that can be financed by public or private contribution, so that men of high standing can be employed having the interest of the public and profession at heart, to discontinue their practice and devote their entire time to this work. To go into our schools, examine the mouths of the children, fill out a chart, submit it to the teacher, who in the monthly report, will forward it to the parent or guardian, telling them this is a true examination of your child's mouth, and recommend that they take the child to their family dentist. A copy be kept by the association, and a copy be forwarded to the National Dental, to be used as they deem best. These dentists also to give short talks on the value of oral hygiene, and to illustrate fully by chart.

I believe the most successful way to educate in any line is by the use of charts, stereopticon or blackboard, as object lessons are the idea. The child sees and formulates ideas of his own, and in this way you cultivate and develop a self-thinking man that will ultimately give us a race far in advance of this present generation. We realize that there are a number of children attending public schools whose parents cannot afford to give them proper dental treatment, and after a national education campaign has been inaugurated and statistics acquired sufficient to show and prove the value and need of this work, then would be the time to go before our city, county and state representatives and ask for appropriation sufficient, so that in connection with the medical inspectors and also the nurses that are now employed in our schools, we may have a dental chair established and those children whose parents are too poor to pay for its needed dental treatment, may receive same without cost.

A report of this work should be sent to every member of the dental profession from time to time, who is willing to co-operate and become a member of this association. A report of this work should

also be forwarded to any medical or dental society on application to work in conjunction with any dental or medical society, to assist in the advancement of science, and also use its best efforts in promulgating anything that would be of interest to our profession, for dentistry of today is a medical specialty, and anything that is of interest to the medical profession is of value to the dental profession, and anything that is of interest to the dental profession is of value to the medical profession. We cannot stand apart; we must, therefore, stand together,—by numbers there is strength—the time has arrived when we must attend more to legislative matters. By an association of this kind it would give us men who could make legislative matters a study.

We now have contract surgeons in our army; the valuable services which they have rendered has proven their need. This should be changed to regular appointments in our army, grading and ranking them the same as the medical surgeons, and not only this, but we should have a bill passed appointing dentists in our navy. This association should put forth every effort to have these bills introduced and passed. These dentists should go before all educational bodies where satisfactory arrangements can be made, such as teachers' associations, colleges, graduating classes, normal schools, Y. M. C. A.'s, and wherever an audience can be acquired, sufficient to warrant a lecture, one should be provided.

I have been informed by a number of school teachers that the present physiology now used is too deep, for they do not understand it. If our physiologies are such that our teachers do not understand them, then how do we expect them to impart the proper knowledge to our children? From members of an association of this kind articles and suggestions should be offered, such that could be used in the journals, magazines and newspapers all over the United States, to inaugurate a national campaign, all to be done within the ethics of the profession. An ideal text book fully illustrated could be formed and be recommended for use in our schools, being such that would receive the endorsement of the dental profession and of such nature that no one would hesitate to recommend.

From statistics already acquired it has proven the need of this work. I have given this a lot of my time and study, and realize that work of this nature will require a great amount of money to take it up and carry it out to success. If we could get jealousy out of our profes-

sion; if we could get our professional brothers to become broad and liberal minded, and get them to realize that there is a business side to everything; if we could get the members of the profession to go down into their pockets, and contribute annually to a fund, what a great amount of suffering we would save—what good would be accomplished, what an advancement would be made in science, and how much easier would it be to practice our profession. The only feasible way that I can see to take up this great work is by interesting certain men of money or some company closely allied to the dental profession, to supply the needed funds to promulgate this work in the interest of our profession and to the benefit of humanity.—*Dental Magazine*.

A CASE OF RESECTION OF ROOT OF UPPER LATERAL INCISOR.

ARTHUR D. BLACK, D. D. S., CHICAGO.

The patient gave a history of a chronic abscess during the previous nine months, and an acute exacerbation during the last past month, as a result of which the bone of the process between the roots of the lateral and cuspid became necrosed and was removed. Examination at the time of this operation showed the end of the lateral root and considerable of its distal surface to be denuded of peridental membrane. A root filling had been previously made. A portion of a solution from a tablet of cocaine $\frac{1}{2}$ gr., morphine $\frac{1}{8}$ gr., and atropin 1-200 gr., was injected into the soft tissues over the root. An incision about three-quarters of an inch long was made through the gum to the bone at right angles to the length of the root, the periosteum was lifted from the bone and the root exposed. The end of the root was then cut off with a fissure bur, and was found to be covered with serual calculus. The surrounding bone was found to be carious and was curetted. The cavity was irrigated and packed with iodoform gauze.—*Bur*.

GOLD INLAYS.

BY C. H. WARBOYS, D. D. S.

The attention of the profession today is fixed upon the making of gold inlays for the preservation of the natural teeth that are so badly decayed as to require large fillings to restore them to normal form and usefulness.

Some of the claims set forth for the gold inlay can be enumerated as follows:

To restore the form without crowning and without the necessity of devitalizing.

To relieve the operator of hours of back-ache producing labor malleted gold filling requires.

To avoid the danger of fracturing the tooth in the preparation of the cavity, also fracturing the tooth by expansion of the mass of gold when heated by the finishing strip.

To relieve the operator of hours of back-ache producing labor and to make a filling that is without question one of the very best, because it has only one point against it, which is its color, and this can be modified somewhat by using gold that is alloyed with silver only, making it 18k.

I will first endeavor to describe my method of making the solid gold inlay, and will take for the case a disto-occlusal cavity of a second lower molar. The cavity should be prepared by extending the buccal and lingual walls sufficiently to not require the separator for most cases that are presented. The cervical portion should be rather flat with the floor inclining slightly inward. This form gives a locking to the base of the inlay which prevents it from leaving that portion of the tooth when the stress of mastication is applied. The occlusal surface should be prepared with a step in the sulcus which will admit the inlay being displaced in one direction only. The cavity walls are prepared so that there is a slight draft, and as smooth as an excavator or chisel will cut them. I am not in favor of the cross-cut bur for the final preparation of this class of cavities, as it leaves a rough interior which is not needed for retention, but does interfere with the removal of the matrix. The margin of the cavity should be quite sharp and well defined, angular in preference to the rounded form which would leave a very thin edge to the inlay, and by not

marking the matrix distinctly makes it more difficult to trim definitely when finishing outside the mouth.

When the cavity is prepared, the next step is the formation of the matrix which for the solid inlay should be made of platinum. The cavity should be smeared with vaseline or soap to allow the metal to slip to place better and respond to the burnisher with greater freedom. Wet cotton is quite as good as anything to press the metal to the general form under the force of the burnisher or amalgam plugger. After being forced to the cervical portion of the cavity in such a way as to surely cover the cervical margin the metal should then be gently forced to the bottom of the step and then removed, annealed and returned to the cavity for burnishing. The wrinkles must be smoothed down and then removed and such portion of the platinum as interferes with the draft of the matrix trimmed. In case the matrix is torn it is easily patched and then reswaged in the cavity.

We are now ready for the final fitting of the matrix, which is best done by placing the platinum in the cavity, then slipping a thin piece of steel between the platinum and the next tooth. The platinum matrix is now filled with gum camphor, which should be forced to place with a good, stiff amalgam plugger. The object of using the gum camphor is to swage the matrix to a fit. The steel strip is removed first, then the matrix can be dislodged without changing its form, and it can be readily removed from the matrix by burning, if it will not readily loosen. A little pure gold can be flowed over the inside of the matrix to stiffen it and then reswaged and burnished close to the margin.

One point particularly I wish to call attention to is the possible stretching of that portion of the inlay that fills the groove and step. If this portion is filled with pure gold and under the stress of occlusion or mastication it is lengthened after the manner of drawing out a wire with a hammer or rolling, it causes the body of the inlay to be forced away from the tooth, in which case we have an imperfect filling. The same thing is more liable to occur with a filling that is built up of foil in the tooth. To prevent this I place a piece of iridio-platinum wire in the groove of the matrix and flow the gold around it. This wire can be bent at an angle to give the form desired in the finished inlay. With the wire in place in the swaged matrix, the tooth side of the matrix should be painted with whiting or yellow ochre, also the

cavity side, just up to the margin, after which the matrix can be filled by melting in pieces of 18 carat gold, alloyed with pure silver, which gives the gold a much lighter yellow color. When the matrix is filled to the proper contour, the platinum should be trimmed as close to the margin as possible, and then cleaned and placed in the cavity and held with a soft pine wedge while the occlusal surface is fitted. The fitting is best done before setting with the cement. After the inlay is ground and the margin properly dressed down to a fine point it should be taken to the laboratory and given a polish that is like a mirror, after which it can be set and will not require any heavy burnishing of the edge. If you depend on burnishing the gold over the cement joint before the inlay is entirely completed you will find that the cement is hard by the time you get the inlay cut down to the tooth. For this reason finish the inlay before cementing to place.

The solid inlay is sometimes made by filling the matrix with some form of precipitated gold while it is in place in the mouth, and either 20k. plate or solder flowed over it after the inlay is removed from the mouth. This gives a very well adapted form to the matrix and for some forms of cavities is very rapid, as the rubber dam is not applied and the same care is not required in placing the gold in the case of a filling that is built in the tooth to form a water tight plug.

I have made use of the solid gold inlay to restore that portion of root that extends from the alveolar process to the gum margin when a piece of the root has broken away.

The scheme is this: Save the piece of tooth that has broken away, place it in softened dental lac with the broken side down so as to get an impression of that surface in the dental lac. When the material is cold, swage a piece of 1-1,000 platinum in the impression with rubber. Remove and fuse in pure gold until you have the broken piece reproduced in metal. This piece is now placed on the tooth root and you will find that it fits. The next step is to fit a band of gold around the inlay and root, letting it extend under the gum as far as you think best. Now grasp the inlay and band with a pair of pliers and remove both together and unite the two with solder. After soldering finish as smoothly as possible and set as you would a crown. You may now do as you wish with the top of the root, as it is nearly as good as before. I can report but two cases of this kind, but am pleased to say that they are doing good service and are in fine condition.

There are two ways of constructing the hollow inlay, the swaged, and the filled over the cement or an investing compound.

I will first describe the swaged hollow inlay, which is indicated where there is much restoration of the tooth substance necessary. The cavity preparation is the same as for the solid inlay, that is it should have a slight draft, and if possible be formed so that it can be displaced only in one direction. Pure gold of about 30 gauge is bur-nished to fit the cavity as closely as possible, and the margin well de-fined. When this is well done the gold should be trimmed almost to the margin, carefully annealed and then replaced in the cavity and swaged to place with rubber, cotton, or anything you may use for the purpose.

Now remove and *very* carefully anneal and replace in the cavity. A small piece of softened modeling compound is now placed in the gold matrix and the patient told to bite it hard and hold till cold. In case of a cavity with an approximal wall gone, a thin piece of steel should be placed between the adjoining tooth and compound, and when the latter is cold remove the steel which will allow the compound and gold matrix to be easily removed. The compound should now be carved to just the form the finished filling is to be, *less* the thickness of the gold plate that is to be swaged over it. The gold matrix with the modeling compound in place is now placed in the swager invested with dental lac in such a way that the margin is just exposed, but supported well all around. A piece of pure gold plate a little larger than the size necessary to lap the margin should be bent with a plier in such a way that it somewhat conforms to the modeling compound, and then annealed and place in position and swaged. After swaging, the piece should be gently removed and next the modeling compound taken from the matrix which should be left in place in the lac, while a hole about 1-16 inch is bored through it at a point about equal distance from the margins.

The matrix should be carefully removed from the lac and placed on the swaged contour and the two pieces should be held in some-thing that will support the whole piece, because the thin gold will not hold up when heated to redness. Care must be taken in soldering the two pieces together, first, that very little borax be placed inside or the pieces will be separated before the borax glasses; second, that the solder be placed inside through the drilled hole about where it is de-sired, and enough of it to make the grinding surface of the inlay

sufficiently strong to withstand the stress of mastication, and third, that the margin be protected by whitening from the solder flowing out on the gold that has been adapted to the tooth.

After the case is soldered it is ready for finishing. If the margin has been well defined the gold can be trimmed with the shears and a paper disk will do the rest.

When finished and ready to set in the tooth, the inlay should be nearly filled with cement that has been mixed stiff enough to be well packed, as it is almost impossible to fill the inlay with the cement that it should be set with.

Another form of hollow gold inlay is made by partially filling the gold matrix with cement or some quick setting investing compound, and then building the contour with some form of the precipitated gold either in the mouth with hand pluggers or out of the mouth with rubber swager, and over the gold flow 20k solder or plate. After finishing a hole is bored through the matrix, and the lining removed and then filled with cement and set.

A cone bur with the point ground off makes a very convenient instrument to give the proper draft to a cavity when it can be used.—*Tri-State Dental Record.*

GOLD INLAYS.

W. E. FRIBLEY, D. D. S., CHICAGO.

I will take, for example, the proximal surfaces of the bicuspid and molars, where considerable tooth substance is broken down, involving the occlusal surfaces, where a nice proximal is required to restore the tooth to usefulness and comfort. Prepare the cavity box shaped, a good square base to rest on (at the cervical). Cut away enough tooth substance, even at a sacrifice of sound tooth structure. If considerable space is secured before operating, no great sacrifice of the tooth need be made. After having the cavity suitably prepared use the gauge of pure gold plate for a matrix best suited for the case, e. g., for small cavities a thinner gauge of plate must be used to insure better adaptation to the walls and easier manipulation; therefore the gauge for matrix varies according to the size of the cavity. Generally a gauge of 32 or 34 will answer in most cases. Burnish into the cavity direct, or, if a difficult case, an impression of cavity can be taken with gutta percha and run

up in cu. amalgam. Burnish into this model and then finish in mouth. One of the objections to the cu. amalgam method is that it necessitates one or more sittings. After having matrix satisfactorily burnished in tooth, fill partially with gutta percha, or temporary stopping, then taking a modelling compound bite. Cool thoroughly before removing. Usually matrix comes out in bite, in no way disarranged. If it does not, it can be easily removed from the tooth and placed in the impression. Mount on the articulator. You now have it just as it was in the mouth, occlusal and proximal surfaces of the adjacent teeth complete. Build up the part you wish to restore with wax (usually red base plate) just as you want it when the work is completed. Cool thoroughly and trim down to right size and invest in a good investment material. (I use Dr. R. C. Brophy's.) Invest so the proximal surface will not be disturbed, but rather the occlusal. Now boil out all wax and dry, paint matrix and surface of the wall of investment where you wish the gold to flow with a solution of borax. Dry and fill cavity with foil gold, and 18 or 20 karat solder, which ever you care to use. It is not necessary to use much pressure, as the foil is only a frame work, as it were, to conduct the solder. Place several pieces of solder on the top as the case may be invested, and heat from underneath. The solder will run down through the mass, uniting it all together, making one of the most beautiful and lasting pieces of dental repairs that can be made.—*Bur.*

ROOT RESTORATION, USING AMALGAM WITH PURE SILVER MATRIX.

W. E. FRIBLEY, D. D. S., CHICAGO.

Pure silver plate 32 or 33 gauge is used, solder with 18 K. gold solder, making matrix slightly smaller than root to insure snug adaptation. If at first it is too small it is easily enlarged with contour pliers. After having matrix fitted to root, if it be an anterior or simple rooted tooth, insert a conical shaped pin (about the size desired for post in permanent crown), coated with wax, in root canal. Mix amalgam (any good alloy), then make a mix of thin cement, use stiff nerve broach to apply cement in floor and walls of cavity around pin, being careful not to get any cement on margins; take pellets of amalgam and incorporate in cement, having a strong matrix. Much of the mercury can be expelled

from the amalgam. Silver, having the greatest affinity for mercury of any of the metals, will absorb mercury quickly, but will not amalgamate with the filling.

In a short time, but preferably at another sitting, the pin can easily be removed by placing a hot ball burnisher on pin, melting wax around it. Use a small hatchet excavator, or any small hooked instrument, to remove matrix; it will slip off easily if not partially disintegrated, which usually is the case.

Now proceed to treat the tooth if necessary. To make the crown you have a perfect measure of the root, by using the matrix removed, to cut out your permanent band by. Make any kind of crown, preferably a banded one. This same method is used for all the teeth, unless decayed beyond all repair. Silver being so flexible and malleable, it is readily trimmed and fitted to any root after over-hanging gum tissue has been removed with trichloroacetic acid. It insures a clean, dry root for treating when it is necessary, and also a perfect form to build up the tooth for crowning or to leave as a filling. Silver has the greatest advantage as a matrix metal, being less irritating, more easily adapted, very pliant, and lastly, it absorbs the mercury more readily than any other matrix metal at our command.—*Bur.*

THOROUGHNESS IN DENTISTRY.*

BY DR. LYMAN CURTIS BRYAN, BASEL, SWITZERLAND.

There are many things which go to make up thoroughness in dentistry—such as the making of perfect fillings, the thorough correction of irregularities of the teeth, the thorough extension of cavities for the prevention of decay, the thorough condensation of fillings, the careful finishing of the gingival margins of fillings, the thorough care of the teeth of children with the view to prevent irregularities, loss from extraction, and consequent tipping and turning of the remaining teeth, and all the ills that follow the indiscriminate extraction of teeth in children, but it is not my province to touch on these different subjects in the limited time at our disposal. My object will be to call your attention to other matters which are not generally discussed before dental societies, and to see if I cannot

*Read before the American Dental Club of Paris.

bring something home to all of you which may help in your daily work, and stimulate you to do those little things which contribute so greatly to the comfort of the patient and render dental work more lasting. I think I could do nothing better than to confine my remarks to two points: (1) Thoroughness in cleansing the teeth, from cusps to alveolar margins, and (2) preventive dentistry, including those hundred and one little things which we all know so well should be done, but which, as a rule, we do not take the time for, saying to ourselves that the patient would not appreciate their value.

This attention to detail would mean considerable expense to the patient, but would reduce to a minimum his bills for the more painful operations of filling.

One who has never tried the methods of practice which I follow would be surprised to find the number who are glad to avail themselves of the benefits of thorough work in a practice among intelligent people of the present day. As Dr. Wright has said in one of his former papers on prophylaxis, the increase in refinement in all classes of society in the last score of years makes the thorough cleanliness of the mouth and beauty of the teeth and gums no more a luxury but a necessity, and a person with unclean teeth, red and inflamed gums from serumal calculi under them, and fetid breath from this and other dental causes, is not only shunned in refined society, but is looked on with disfavor by the middle classes.

Volumes could be written on this heading, but we are all familiar with the evil, and the question under discussion now is how to combat it. If every dentist would give to this subject the thought which it deserves, and would devote more time to prophylactic treatment, the object would be achieved, and the human race would be the better for it. But I fear the profession is not ripe for it. This work is not attractive to the professional man. Some of us must look elsewhere for those who will undertake this all-important treatment, if it is to be done as it should be. Dr. D. D. Smith believes that only the conscientious dentist can do this work, but we have seen that the dentist will not, or cannot, for various reasons, give the necessary amount of time in order to do this work thoroughly.

I, however, prefer to give this "prophylactic treatment and general attention" myself, and if possible turn over much of the routine work, such as gold and porcelain fillings to a skilled operator whom

I know to be capable of doing it thoroughly and well. In some cases work should be referred to specialists, if one will give his time to do thorough work for a select and limited practice.

Dr. C. M. Wright has in former papers on prophylaxis proposed a sub-specialty in dentistry. He urged the profession, in April, 1902, to establish a special practical course in dental colleges for the training of cultured women in one line, viz., the polishing of the teeth and the prophylactic care of the mouth.

Dr. M. L. Rhein, of New York, has suggested the special education of the "dental nurse," but I had not seen his suggestion and plans before this paper was prepared. The colleges have not accepted Dr. Wright's suggestion, and I have not heard that Dr. Rhein's plan has materialized, but would suggest that each dentist who recognizes the importance of this work, and who himself cannot, or will not, thoroughly do the work—for which there is such a crying necessity among educated and refined people—should proceed to train his own assistants in this branch of work, or refer his patients to operators who are familiar with it.

Thoroughness in dentistry means doing everything known to us to prevent decay of the teeth and the various degenerative processes in the oral cavity. Do we do this? I answer promptly that there is not one man in ten in the profession who does his full duty in this matter, not even among the "first-class" men of today. Here in Europe we are learning from Dr. Younger what can be done for teeth that have been neglected until they are ready to fall out, but are we learning to keep the teeth of all our patients in such condition that they will not need the services of a Younger? That is what I want to ask you, and that is what I would like you to ask yourselves. Do elderly patients in your practice, who have been with you for ten or twenty years, have healthier gums and firmer teeth now than when they came to you? If they have, you have done your duty; if not, I say plainly, you have not done your duty by them, provided they have been willing to carry out your instructions.

What do we do to prevent the recession of the soft and hard tissues about the teeth? Do we not simply tell the patients, when they ask if anything can be done to prevent this recession of the gums from the necks of the teeth, that it is a process of nature, against which we can do little or nothing?

Those who have followed the papers or writings of specialists know that careful and frequent polishing of the necks of the teeth with hardwood polishers and pumice powder, together with massage of the gums, will prevent this recession and bring the receding tissues down again, and that improper or too much brushing with unsuitable brushes is a cause of recession. That this is the case is proved by the fact that the gums do not usually recede on the palatal surface of the teeth, on which only the tongue does the cleaning. If I may diverge a little from my set theme, I will give you a hint of a method I have discovered and practiced, and which I will soon present to the profession more fully, for remedying the recession in far advanced cases. Take as an instance the case of a canine the overlying gum of which has receded far up along the face of the root, but is still in its normal place on the approximal sides of the tooth, exposing a brown, bare neck and a long, conspicuous root, the line of gum recession extending—U-shaped or V-shaped—up the root. About a millimeter under this receded gum you will find the receded alveolar margin, with its corresponding periosteum. First inject a local anæsthetic which does not contain adrenalin, and in the gum to be operated on make a tent-shaped incision of one and one-half or two millimeters from the margin of the gum from the eminence over the lateral to that over the first bicuspid, and dissect away the periosteum with the gum flap. Prior to the operation the neck of the tooth is thoroughly cleansed and burnished, as one would burnish and polish a gold filling.

The loosened flap of gum, with the periosteum, is now brought down to a distance of one or two millimeters from the upper wound edge, leaving an open wound filled with blood. One or two sections or a coil of a root-canal lead point is cut and laid in the wound in order to retain the space thus gained, and to keep distended the gum flap with its corresponding periosteum at the neck of the tooth. I have devised a small platinum-wire gauze distender to keep the flap in place, and to protect the wound from lip friction until new granulations and new bone tissue have filled the space in the wound. As soon as the blood coagulates in the wound, the distender is adjusted to place, and the patient is instructed not to touch the gum for ten days with a brush or any other irritating substance—which would remove the clot or the new granulations as they are formed. Some-

times it is necessary to cover a large wound with a little plate of gold or other rigid material attached to the teeth, in order to prevent the lip from forcing out the coagulum, and the new granulations which begin to form soon after the operation. In a month or two after the operation the same procedure can be repeated, if the gum has not been fully brought down. By repeating the operation the gum may be successively carried down to the desired place, as it is not advisable to bring it down more than one or two millimeters at a time, allowing the wound to heal and new gum to form before repeating the operation. With these few words of interruption, let us continue to consider what is understood by thoroughness in dentistry.

Our greatest problem in dentistry today is preventive dentistry, which of course includes the prevention of pyorrhea alveolaris, a disease which is the result of the dentist's or the patient's neglect of the premonitory symptoms. My own practice confirms the opinions of multitudes of writers, who claim, as Dr. D. D. Smith, of Philadelphia does, that perfect cleanliness of the teeth above and below the gingival margins will prevent this common but dreadful disease and a large percentage of cases of caries. In fact, it may be laid down as an axiom, that any tooth whose surfaces and natural or acquired defects are kept constantly clean will not decay.

The great difficulty in this connection is that it is impossible for the patient to constantly keep every surface of each tooth—including the approximal surfaces and deeper defects in the enamel—perfectly clean. Consequently, decay is bound to occur sooner or later, in spite of the combined efforts of patient and operator, unless we use some chemical substance such as silver nitrate, that will penetrate those defects which it is impossible for the patient or dentist to keep clean.

We must do our duty by our patients by treating as thoroughly as possible all local conditions, but we should likewise advise them concerning diet and exercise. Every person with a tendency to pyorrhea should be advised to avoid nitrogenous foods, and to drink freely of such waters as Lithia, or Eptingen, and take at suitable intervals doses of Basel-Land or Sal hepatica, or to follow a *regime* that his family physician may plan out for him. These waters should be drunk before retiring, to assist sleep. Outdoor exercise is, however, the *panacea*.

The method of using antiseptic mouth washes recommended by my colleague H. B. Respinger is the most efficacious—viz., before retiring, and while preparing for bed, the mouth wash should be held in the mouth and rinsed about forcibly between the teeth for at least five minutes; and two or three changes of the water, using it for about ten minutes, is even better. Hydronaphthol mixtures made palatable are useful antiseptic solutions.

There are three ways of doing thorough work, and of doing our duty by our patients and ourselves. If the number of patients is too great to enable us to do them full justice—(1) One should recommend the patients requiring special work to practitioners one knows will do justice to this special work. (2) Secure the services of an able and thoroughly qualified assistant, and train him to one's own methods of practice. Or (3) raise fees, so that those who do not appreciate thorough work may go elsewhere. The latter course does not usually work well in reducing practice, because those who are thoroughly treated, and have confidence in the operator, will gladly pay a higher fee as their dentist becomes more able and efficient, rather than go to another man not so careful of every detail; and if they do, they will return to you upon finding that they are not being thoroughly looked after, and that their dentures degenerate every year and become less useful at that period of life when they are mostly needed—"when the sound of the grinding is low."

The demanding of high-class fees will never be a detriment to the man who can do the best work, and is thorough in his practice; who will never undertake to receive a new patient without being assured that he wants the best dentistry can do for him, and will do that work so that the patient's dental organs will be in the best possible condition, not only for immediate use, but also for old age. Do we all look forward to the old age of a patient, or do we not do what is needed today, and let the future take care of itself? This is one of the main points of this paper—to induce you to look forward, not only in making fillings at so much apiece, but to assure yourselves that you are doing such work for your patients every year or every month as will insure a useful set of natural teeth from youth to old age. This cannot be done by examining a patient's mouth only for the purpose of ascertaining how many fillings are needed, or can be made at each visit. Dentistry today is not simply the filling of

carious teeth. It means keeping your patients' mouths so that they, like wine, will improve with age. When we can look in the mouth of an eighty-year-old patient whom we treated for pyorrhea twenty or thirty years ago and see gums and alveoli like those of a man or woman of twenty-five, with his once loose teeth as solid as the others—then, and only then, can we take pride in our work.

The average dentist of today seems to think that when he has filled all cavities, and spent a half hour in scaling off the worst of the tartar accumulations, he has done his duty by the patient, and I find that this is the popular belief with the majority of patients, until they learn from a thorough operator what modern methods can do for them. The thorough dentist, after looking for cavities and noting them carefully, should prepare casts of the new patient's jaws and teeth for the purpose of future study, in order to find out all points of malarticulation which one cannot discover except, by a study of casts—so that they may be corrected by grinding; and for various other purposes and reasons. I have in a former paper entered so fully into the reasons for preserving the casts of all our regular patients, that I will not further remark on this important subject. In the field of preventive dentistry there is much opportunity for reform at the present day. I will also refrain from describing my published method of treating all frail teeth with silver nitrate for the purpose of preventing decay, but I will ask you to consider with me some additional preventive methods.

We all know where decay is most liable to occur. The first trouble is with the deciduous molars; these molars may cause decay of the first permanent molars at the same time and place that they have for thousands of years. We have a valuable method of preventing this first decay which occurs in the mouth, in a modification of the old and now discarded Arthur method of grinding the deciduous molars only.

We all know that our most dangerous cavities before the age of six are to be found in the approximal surfaces of the eight deciduous molars. Now, if we know just where we should expect decay, and discover it in its incipience, and will grind off the distal surface of the decayed first deciduous molar, so as to form an inclined plane, exposing the two cavities, and leaving a free space, which, however, must not extend below the gum but must leave a shoulder at the

gingival margin, we will have perfect access to the cavities; and it has been my experience that this is absolutely the only way to get at the deciduous molar cavities in children of from four to eight years of age, in order to fill them so thoroughly that they will resist future decay and prevent the loss of pulps, a condition so often occurring in the very best practices, and for the very best little patients.

Where we attempt to fill these cavities in deciduous teeth after the contouring methods we adopt for the permanent teeth in patients of mature age, we often fail, and lose pulps. This V-shaped space which we prepare in the first deciduous molar gives thorough access to the cavities, and a degree of assurance that the fillings will last, as it forms self-cleansing spaces—and by “self-cleansing” I do not mean spaces one must cleanse oneself. Soon after the eruption of the first permanent molar, if we should find the slightest decay on the distal surface of the second deciduous molar, we should in the same manner grind away the distal surface of the latter tooth, in order that we protect the newly erupted permanent tooth. Since I have adopted this method I have lost very few pulps in deciduous molars under ordinary circumstances, and it is a method to which young children easily submit. Such cavities, if taken in time, and if the ground surface on each tooth be touched with silver nitrate, very often require no filling at all, as the cavity is almost entirely ground away. I consider this as a method of doing thorough work for children.

In speaking with dentists in regard to the cause of this neglect of thorough cleansing, which requires hours of work for its thorough performance, instead of minutes, as is usually the case, I find that they offer as an excuse that “Our time is all taken up by filling and the other more remunerative operations. If we would thoroughly cleanse the teeth and polish them below the gums after removing the serumal deposits, the patients would not pay us as willingly for that work on the ‘per hour’ basis, as they do not appreciate the necessity for such treatment until the teeth and gums have gotten into a very bad state; then, of course, it will take sometimes hours, not minutes, to improve their condition.” Another says, “It is beneath my professional dignity to do this unskilled labor, this dirty work, which the patients themselves should do. If they brushed their

teeth properly and with proper powders and used silk, they would keep them thoroughly clean. I do my part; I take off the hard tartar above the gums and below them, when I see it. I give them silk to use between the teeth, orangewood sticks to remove what the silk and brush fail to remove; but they do not use them, not one in ten." Many patients do not co-operate with us and do as we instruct them, and still expect us as dentists to keep their teeth and gums in good condition. To do this for the careless patient would necessitate our seeing them at least every three months or every month, as many dentists do now in America. We should devote at least one hour or two every month to simply cleaning their teeth where they need it the most—where the brush does not reach, and where decay occurs most frequently.

Another point of thoroughness, which it took me over twenty years of practical experience to learn, is not to adapt one's work in one row of teeth to a deformed and irregular bite on the opposite jaw. For instance, if a lower bridge is to be made which would have to articulate with a row of irregularly placed molars and bicusps, do not make the bridge to conform to the abnormally placed and elongated teeth. Elongated and irregularly opposing teeth should be heroically ground. If one of them be elongated to such an extent as to cause an imperfect articulation, thus failing to produce a good masticating surface if left undisturbed, devitalize it, cut it down, and crown it. Grind the remaining teeth to proper form and alignment after studying the case on articulated casts of the mouth. One single tooth should not be allowed to stand in the way of producing a perfect articulation. Teeth that articulate correctly are less liable to decay than when one tooth is long and its neighbor short, and the process of mastication cannot consequently be normally performed. Every new case should be studied on casts, and a plan of treatment made of what is to be done to give the best final results. If desirable, this plan of treatment may be explained to the new patient on the casts. One can never satisfactorily explain or have a clear understanding of all conditions without the assistance of casts, which may be studied at one's leisure. The dentist can then go over the case with the patient, and the same casts will, when compared with casts of the finished case, convince him of the advantage of the work done or to be done. One should not ask the patient about how the work should be done. I do not discuss these points of practice, even if the

patient should happen to be a dentist. Be assured that he wants the best thing done, and if it be a case requiring a large amount of work, give the patient an idea of the cost and let him decide if he can afford it; then carry out your plans without further reference to him about details and methods.

If a patient puts himself in the hands of the dentist and has confidence in him, it is seldom advisable to discuss with him methods of practice. Do not ask the patient if he is willing to have a pulp devitalized or an irregular tooth ground. If such operations be necessary, do them regardless of the patient's opinions in the case. If he objects to what in your opinion is necessary in order to make a perfectly satisfactory operation, it is decidedly better to let him go than to do unsatisfactory work. If we must do something against our judgment, as occasionally occurs, the patient should be given to understand that it is done without any responsibility on the dentist's part, and it should be made clear to him that it must not be spoken of to others as a sample of one's work, if the work is not perfectly satisfactory to the operator, and has been done as a compromise with the patient.

I consider those dentists especially lacking in thoroughness who treat their patients from one toothache to another and never undertake a thorough examination of all the teeth in order to put them all in perfect order, regardless of time and cost. Let the greater expense come once, for then the mouth may be kept in a normal condition from year to year at a small outlay, not to mention the source of comfort and usefulness which such a mouth and teeth will be. The patient should consider this first outlay like that incident to the building of a house; it usually occurs but once in a lifetime. A new patient should always be made to understand this point, for then few will object to the expense.

Not one patient in twenty-five, in a practice in which thorough work is the rule, should ever suffer from toothache. This should be as rare an occurrence in a first-class practice among our regular patients as extractions are now among people who attend regularly to their teeth.—*Cosmos*.

MEETINGS

THE G. V. BLACK DENTAL CLUB CLINIC.

The G. V. Black Dental Club of St. Paul will hold its Annual Midwinter Clinic in February, 1908. It is our intention to make this meeting the most interesting and profitable of all which we have held.

A cordial invitation is extended to the members of the profession to attend and assist us in making this meeting the best that has ever been held in the northwest.

Dates and program will be published later.

For further information address,

R. B. WILSON, Secretary,
Am Nat. Bank building, St. Paul, Minn.

INDIANA STATE BOARD.

The Indiana State Board of Dental Examiners will hold its next regular meeting in the State House at Indianapolis, January 14, 15, 16, 1908. At this meeting all applicants for registration in this state will be examined. For further information apply to the secretary.

F. R. HENSHAW,
Middletown, Indiana.

TO THE ALUMNI OF THE NEW YORK COLLEGE OF DENTISTRY.

Any alumnus seeing this notice, is kindly requested to send his name, address, and year of graduation, to the undersigned.

MAURICE GREEN, D. D. S.,
1190 Lexington avenue, New York City.
(Acting for the Alumni Association of the N. Y. C. D.)

NORTHEASTERN DENTAL ASSOCIATION.

At the annual meeting in Boston of the Northeastern Dental Association these officers were elected:

Dr. Edward B. Griffity, Bridgeport, Conn., president; Drs. Ned A. Stanley of New Bedford and H. A. Kelley of Portland, vice-presidents; Dr. Edgar O. Kinsman, Cambridge, Mass., secretary; Dr. C. F.

Kreppel, Forest Hills, Mass., assistant secretary; Dr. Frederic I. Murlless, Jr., Windsor Locks, Conn., treasurer; Dr. C. H. Riggs, Hartford, chairman; Dr. D. Manson, Burlington, Vt., editor.

SOUTH DAKOTA STATE BOARD OF DENTAL EXAMINERS.

The next meeting of the South Dakota state board of dental examiners will be held at Sioux Falls, S. Dak., Tuesday, January 14, 1908, beginning at 1:30 p. m. All persons desiring to take this examination must make application to the secretary, and send fee of \$10.00 at least one week prior to the above date. No candidates will be received for examination who do not make application as above specified. Applicants are required to bring dental engine, filling materials, articulators, teeth, and all appliances necessary to do crown and bridge work.

G. W. COLLINS,
Secretary.

NATIONAL INSTITUTE OF DENTAL PEDAGOGICS

The Fifteenth Annual Meeting of the National Institute of Dental Pedagogics will convene in the St. Charles Hotel, New Orleans, La., December 31 and January 1 and 2, for which the following program has been prepared by the executive committee. All teachers in dental colleges are respectfully requested to attend this meeting.

PROGRAM.

1. President's Address.....Dr. J. H. Kennerly, St. Louis.
Discussion:
 Dr. A. G. Friedericks, New Orleans.
 Dr. H. E. Friesell, Pittsburg.
2. Report of Commission on Nomenclature.....
 Dr. S. H. Guilford, Philadelphia.
Discussion:
 Dr. J. D. Patterson, Kansas City.
 Dr. C. R. Turner, Philadelphia.
3. Recitation Teaching in Orthodontia.....
 Dr. Calvin S. Case, Chicago.
Discussion:
 Dr. S. H. Guilford, Philadelphia.
 Dr. B. E. Lischer, St. Louis.

Dr. C. R. Jackson, Indianapolis.

4. A Method of Teaching Technical Operative Dentistry..
.....Dr. A. E. Webster, Toronto.

Discussion:

Dr. D. M. Cattell, Nashville.
Dr. H. T. Smith, Cincinnati.
Dr. Byron H. Strout, Boston.
Dr. H. M. Semans, Columbus.

5. The Teaching of Prosthetic Dentistry.....
.....Dr. Walter M. Bartlett, St. Louis.

Discussion:

Dr. R. M. Sanger, East Orange.
Dr. Hart J. Goslee, Chicago.
Dr. Ellison Hillyer, New York.
Dr. H. P. McGruder, New Orleans.

6. Teaching Operative Dentistry and Dental Pathology....
.....Dr. Harry B. Tileston, Louisville.

Discussion:

Dr. D. M. Gallie, Chicago.
Dr. L. M. Waugh, Buffalo.
Dr. S. F. Foster, Atlanta.

7. A Method of Teaching Dental Ceramics.....
.....Dr. W. L. Fickus, Pittsburg.

Discussion:

Dr. W. M. Randall, Louisville.
Dr. C. K. Buell, Buffalo.
Dr. W. F. Lawrenz, St. Louis.

8. The Didactic Teaching of Dental Anatomy, Embryology and
Histology.....Dr. C. D. Lucas, Indianapolis.

Discussion:

Dr. William Bebb, Los Angeles.
Dr. F. B. Noyes, Chicago.
Dr. C. L. Babcock, Milwaukee.

9. Report of Master of Exhibits. Dr. F. C. Friesell, Pittsburg.
10. Report of Master of New Teaching Facilities.

Dr. N. T. Yager, Louisville.
B. E. LISCHER,
Secretary and Treasurer.

MISCELLANEOUS

SECURING THE FRAGMENTS OF A LOWER FRACTURED DENTURE.

It is often difficult to securely wax together a broken plate, especially a lower partial. If a strip of wax such as the dental depots use to attach a set of teeth to, is softened and laid on a flat, unyielding surface—a piece of glass—the broken plate may be pressed, teeth down, into the wax, using both hands to hold the pieces in proper position.—*A. C. Willman, Review.*

BURNISHING GOLD PLATE TO A TOOTH.

When burnishing a piece of gold plate to a lingual or other aspect of the tooth a good practice is to place a piece of silk ribbon over the gold and carry the ribbon around the tooth so as to have both ends meet on the opposite side and hold them firmly with the fingers, thereby holding the gold plate in place. Under this silk the gold may be burnished with very little trouble.—*E. M. S. Fernandez, Review.*

SHRINKAGE IN RUBBER DURING VULCANIZING.

The amount of shrinkage depends not alone on the time the rubber is subjected to the process of vulcanization, but also upon the temperature. The lower the temperature and steam pressure, the less the loss in shrinkage and the less the contraction in cooling. Low heat and long time also insures an improvement in the texture of the product.—*George B. Snow, Dental Brief.*

REPAIRING GOLD FILLINGS.

My observations have led me to place a great deal of faith in amalgam used in the patching of gold fillings which have failed, either at the cervical margin or the usual proximal margin. There is a peculiar action between gold and amalgam that renders amalgam particularly useful as a patch alongside of gold, and I believe the same holds true of tin, and for the same reason that there is a certain electro-chemical action between the base metals of the amalgam or the tin and the gold filling.—*W. V. B. Ames Review.*

TO MEND A BROKEN ENGINE CORD.

When your engine cord breaks the common way is to join with thread. This takes time, and is clumsy. Flow sticky wax over the severed ends, and while hot join together, first moistening your fingers. Roll the ends together, allowing them to overlap. Or cut the ends on a slant, bring them together, and see that the wax is very hot, and incorporates with the fibre. This makes a neat, compact joint.—*Dr. F. B. Spooner, Summary.*

REMOVAL OF PULP WITH CALCIFIC FORMATIONS.

In case of failure to anesthetize a pulp with cocaine and pressure anesthesia, due to calcific formation in the pulp, I have obtained good results by the application of sulphuric acid. Make the application for a few minutes, then wipe out the cavity with sodium carbonate and many times you will then be able to anesthetize the pulp.—*George W. Cook, Dental Review.*

COLSON'S POULTICES.

A little dental apparatus made by Dr. C. B. Colson in Charleston, S. C., I believe, will bring the abscess to a head very quickly, and does draw to a head sometimes and gives relief. It consists of a little emulsive poultice, which, when put into boiling water will swell up and you put that in the mouth between the lip and gum.—*Dr. Buttwick, Register.*

GOLD SWEATED INTO MATRIX.

I use platinum for the matrix. I furthermore use no flux whatever. Nor do I invest. Many suggestions for making porcelain inlays have no application to the making of gold inlays. My conclusion, after much experimenting, is that pure gold "sweated" into the matrix gives the best result. I do not care for a slight tear in the floor of the matrix. By my method of sweating, no gold need pass through to cause a misfit.—*Dr. H. Barnes, Register.*

PARTIAL CROWNS.

That a partial crown should be used wherever it is possible, instead of a gold-banded crown, there can be no doubt. Every conscientious operator seeks to have engrafted upon the roots of molar and bicuspid teeth gold crowns. Wherever possible, he avoids putting a band around the root of the tooth, so that an inlay attachment is a substitute for this, and it is my opinion, after some experience of that kind, that it is firmer than any full gold crown.—*E. J. Perry, Review.*

AMALGAM MIXING.

In many suggestions for mixing amalgam I have read, none are so simple as the use of an ordinary thumb cot, costing five cents at any drug store. I have used this method for four years, and I find it is the easiest and best way to mix a thoroughly incorporated and smooth batch of amalgam. Expressing the surplus mercury through chamois, the filling need never touch the hands; the cot being sterile leaves it aseptic. It also prevents absorption of mercury by the operator.—*Dr. C. C. Dobbs, Summary.*

COVERING NEARLY EXPOSED PULPS.

I am inclined to believe that, given a tooth with a cavity approaching very near to the pulp, the chances of saving that pulp in its vital state are much greater if a layer of some bland material such as gutta percha or a resin in solution is placed over the region of near exposure, than if the oxyphosphate be used exclusively, especially if this be the slow-setting variety with free acid plainly in evidence. Personally, I prefer oxychlorid for covering all nearly exposed pulps, with generally in addition a film of gutta percha over the region most nearly exposed.—*Dr. W. V. Ames.*

THE APPROXIMAL SPACES.

The destruction of these spaces is not only a source of great discomfort to the patient, but is positively dangerous. The first danger is that of recurrence of decay. If the teeth are not properly contoured and a proper contact with the approximating tooth has not been made by a small contact point, the margins of the cavity will in all probability fall within the area of susceptibility, and as the food and bacteria crowd in between such a beautiful harbor for them, it will not take long to set up a secondary decay that will be far more serious than the first. The second danger is that of gingivitis and pyorrhea, and many teeth have been lost that way, as every man of observation can testify. The gum tissue is crowded out of its place by the teeth falling together, a further irritation is set up by the crowding of food products between the abnormally placed teeth, and the end is soon in sight. The third danger, a rare one, but one that does occur, is the growth of gingival tumors as a result of the continual irritation of food debris.—*Dr. J. V. Creu, Summary.*

THREE WAYS THAT WILL SURELY CAUSE THE PORCELAIN INLAY TO REMAIN IN PERFECT CONDITION.

Lately, I have nused the camphor and also invested my platinum matrices in asbestos, this giving me fifty per cent betterment in adaptation of the inlay. It may take a little more time, but in a few years the patient does not remember whether it took half an hour or three hours; but he does remember whether or not the inlay is *in situ*, and looks well. The finished inlay gave me an absolute fit (it could hardly be dislodged, when tried in) and was one which, when cemented, nothing save tooth fracture could dislodge. To repeat, use gum-camphor, invest matrices, also obtain pressure when cementing to place by tying in the inlay, and see the great improvement which will result.—*G. B. Mitchell, Dental Brief.*

TO REPLACE A BROKEN FACING ON A BRIDGE IN THE MOUTH.

Cut or grind off the old pins even with the backing. Then with a drill the size of the platinum pins drill through the backing at the point of one of the original pins. With a cross-cut fissure burr, drill the backing to the depth of the platinum pins, cut a slot to and including the other pin, and with a cone-shaped burr countersink the slot on the lingual side. Now select a suitable facing, the pins of which will pass into the slot. Remove the facing, and with a flat, wedge-shaped instrument pressed tightly between the pins and close to the porcelain, bend the ends of the pins together, and with a file flatten the pins slightly where the ends meet, so that a small piece of No. 18-k. solder can be laid upon them. Then lay the facing on a piece of asbestos, and with a mouth blowpipe gently heat up and solder the pins together, thus forming a staple, which, when the facing is in place, will enter the slot and extend into the countersunk portion. The latter is then filled with quick-setting amalgam and the repair is completed.—*Dr. A. J. Sawyer, Dental Cosmos.*

PERSONAL AND GENERAL

Robberies.—Dr. C. C. Thomas, Wheaton, Ill., loss not given; Dr. H. D. Mooreman, Aurora, Ill., loss \$50.

Commits Suicide.—Dr. F. R. Cross, a dentist of Oregon, committed suicide on the Isthmus of Panama, October 19.

Philips-Smith.—Dr. William J. Philips and Miss Pearl Smith, both of West Salem, Wis., were married October 29.

Accused of Peonage.—Dr. C. E. McConnell, a dentist of Orin Hill, Ala., was arrested on the unusual charge of peonage.

Severance-Kah.—Dr. Asa E. Severance and Miss Sophie Kah, both of Milwaukee, Wis., were married in Chicago November 7.

Henry-Gilbert.—Dr. James Henry, of South Amboy, N. J., and Miss Elizabeth Gilbert of Trenton, N. J., were married October 31.

Dental Firm Bankrupt.—The Eagle Dental Manufacturing Company of Philadelphia was adjudged an involuntary bankrupt.

Baldwin-Hutchinson.—Dr. R. W. Baldwin of Viroqua, Wis., and Miss Jessie Hutchinson of Montezuma, Iowa, were married October 16.

New Member on Dental Board.—Dr. H. D. Brand of Tacoma has been selected for reappointment on the State Board of Dental Examiners.

Dental Examination in Public Schools.—A movement is in progress in the city of Milwaukee to have dental examination made in public schools.

Commits Suicide.—Dr. P. N. Palmer, who has been practicing dentistry in Augusta, Ga., committed suicide while attending dental college at Atlanta.

Lindsay-Tilley.—Dr. George R. Lindsay of Grand Junction, Colo., and Miss Hattie Tilley of Frederickton, Nova Scotia, were married November 9.

Nicholas-Stickley.—Dr. C. E. Nicholas, of Harrisonburg, Va., and Miss Frances E. Stickley, of Mossy Creek, Va., were married in the latter place recently.

Dentist Appointed.—Dr. W. J. Weatherwax of Peoria, Ill., has been appointed dental interne at the South Bartonville Hospital for the Insane. Appointment was made by competitive examination.

Northeast Missouri Dental Association.—The Northeast Missouri Dental Association held its meeting in Kirksville, November 11 and 12. There was a good attendance of the Iowa and Illinois dentists.

Painless Dentistry.—James Henry, proprietor of the Hamilton dental parlors in Hamilton, Canada, was assessed \$65 in a damage suit for failure to live up to his promise to perform an operation painlessly.

Southern Illinois Dental Society.—The Southern Illinois Dental Society met in East St. Louis October 22 and 23. Dr. C. B. Rohland of Alton was elected president. The next meeting will be held in Greenville.

Kissing and Pyorrhoea.—According to a London physician pyorrhoea is due to prevalence of kissing. It is said, however, that there are a number of old maids who have never been kissed yet have been afflicted with pyorrhoea.

Dentist Arrested for Manslaughter.—Dr. Walter H. Morris, a dentist in Newark, N. J., who recently run over and killed Marcus J. Jacobs, a theatrical manager in that city, with his automobile, has pleaded not guilty and was released on \$15,000 bond.

Tri-City Dental Society.—The Tri-City Dental Society held its meeting in Omaha October 18. The following officers were elected for the ensuing year: President, Dr. E. H. Bruening; vice-president, Dr. J. J. Wallace; secretary, Dr. H. E. King; treasurer, Dr. Scott Covalt.

Dentist Suffers from Accident.—Dr. D. J. Reese, a dentist in Pittsburgh, Pa., while working on a tooth, was injured by a splinter entering his right eye. He is being treated at the Shope Hospital in that city. An operation was necessary and the doctor will lose the sight of one eye.

Decides for State Board.—Through Dr. J. W. Penberthy, president of Minnesota State Board, we are informed that in the case recently reported of the State Dental Board vs. E. R. Taylor, M. D., the case was decided in favor of plaintiffs. Dr. Taylor claimed the right to practice dentistry on his medical license. The case has been appealed from the municipal court.

Fail to Give Credit.—In a recent issue of *The Dental Era* there appeared an article copied from THE AMERICAN DENTAL JOURNAL without the credit, which is customary in the observance of the rules of journalistic courtesy being given. The same offense is charged against the *Plexis*, a medical journal. We trust it was only a matter of oversight on the part of the editors of those journals.

Removals.—Drs. T. B. Sanders, from Louisville, Ky., to Owensboro, Ky.; S. B. Reque, from Clear Lake, Wis., to Prairie Farm, Wis.; J. A. McIndoe, from Rhinelander, Wis., to Beloit, Wis.; J. M. Segur, from Detroit, Mich., to Los Angeles, Cal.; W. A. Chamberlain, from Fond du Lac, Wis., to Seattle, Wash.; E. F. King, from Milwaukee, Wis., to Fond du Lac, Wis.; Charles Hindman, from Branchton, Pa., to Lorain, Ohio; C. A. Lovgren, from Ellsworth, Wis., to Red Wing, Minn.; G. H. Hinye, from Berlin, N. Y., to Greenwich, N. Y.; C. E. Sims, from Indianapolis, Ind., to Anderson, Ind.; A. C. Davidson, from Chariton, Iowa, to Holdrege, Neb.

Meeting of the Lehigh Valley Dentists.—The Lehigh Valley Dental Society held its bimonthly meeting in Allentown, Pa., November 18 and heard an excellent program. Dr. W. C. Scott of Lansford presided. Dr. DeLong read a paper on "Pyorrhea, and Its Treatment with Pyorrhoid and Dentinol." Dr. Henry gave a table clinic on "Artificial Enamel." Following the meeting there was a social session.

New College at Nashville.—Application was filed at the courthouse in Nashville for a charter for the "Nashville Dental College." The incorporators are Drs. J. Y. Crawford, J. T. Meadors, S. L. Rich, R. O. Tucker, H. A. Holder, J. S. Ward, William D. Sumpter, D. B. Blake and Mr. Campbell Pilcher. A majority of the above named gentlemen have for some time been connected with the Dental Department of the University of Tennessee.

Danville-Champaign Dental Society.—The semi-annual meeting of the Danville-Champaign Dental Society was held at Danville, November 12. The following officers were elected: Dr. S. W. Heel, Monticello, Ill., president; Dr. F. O. Sale, Urbana, Ill., vice-president; Dr. H. E. Davis, St. Joseph, Ill., treasurer; Dr. G. C. McCann, Danville, Ill., secretary; Dr. H. P. Warner, Champaign, Ill., librarian.

Adams-Hancock Dental Society.—The Adams-Hancock Dental Society held its meeting in Quincy, November 5. The following officers were elected for the ensuing year: President, Dr. R. E. Tull of Carthage, Ill.; vice-president, Dr. J. B. Buehner of Quincy; secretary, Dr. T. A. Hartley of Warsaw; treasurer, Dr. C. T. Hewes of Quincy; librarian, Dr. Warren L. King of Quincy. The next meeting will be held at Warsaw.

NECROLOGICAL.

Dr. Frederick Bradley, a dentist at Newport, R. I., died October 23.

Dr. Henry W. Young, a dentist at Wilkesbarre, Pa., died November 13 of apoplexy.

Dr. Frederick Bradley, a dentist at Newport, R. I., died October 23. He was 58 years of age.

Dr. Thomas Adelbert Goodwin, a dentist at Warsaw, Ind., died November 1 of Bright's disease and heart trouble.

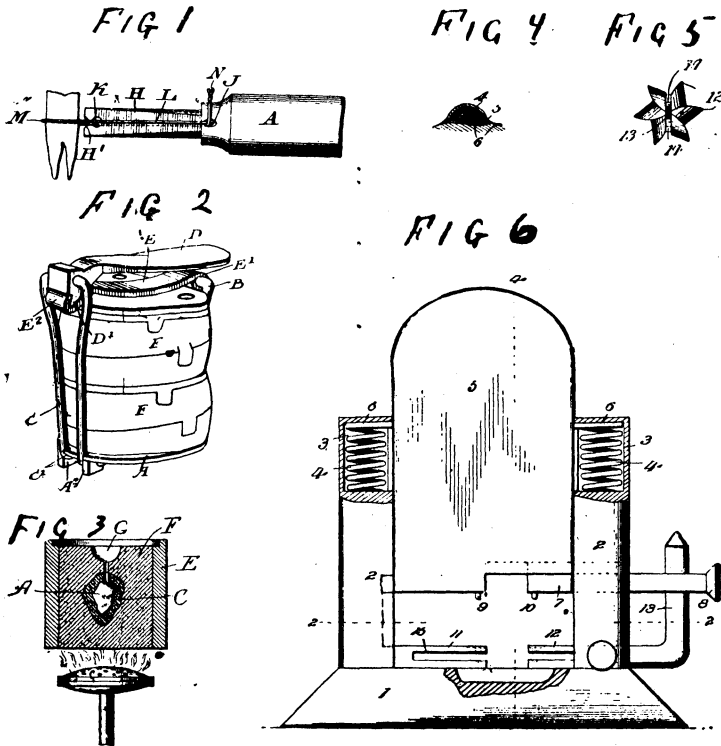
Dr. Charles E. Monks, a dentist at New Britain, Conn., died October 29 of blood poisoning. He was 38 years of age.

Dr. William W. Perkins, a dentist at Baldwinsville, N. Y., died November 8 of heart disease. He was 79 years of age.

DENTAL PATENTS

Fig. 1.

855,875. Dentimeter—Joseph Bode, Philadelphia, Pa., assignor to James W. Ivory, Philadelphia, Pa. Filed January 18, 1907. Serial No. 352,865. Claim.—1. A dentimeter having a loop of pliable material con-



nected therewith, the same being adapted to be fitted on a tooth, and means for tightening said loop thereon; said means being adapted to have the adjacent length of said piece and the ends thereof, and the fastenings of the latter, on the exterior of the device.

Fig. 2.

865,733. Dental Clamp—Margaret H. Weagant, Owen Sound, Ontario, Canada, executrix of Henry Blakey Weagant, deceased. Filed February 15, 1907. Serial No. 357,480½. Claim.—1. In a dental clamp the combination with the base, of loops suitably connected thereto dia-

metrically opposite to each other and extending upwardly, a spring bridge pivotally held on the end of one loop and provided with a hook at the opposite end, a lever pivotally mounted on the top of the opposite loop and provided with a depending lip designed to be brought in engagement with the hook as and for the purpose specified.

Fig. 3.

865,823. Apparatus for Making Molds for the Casting of Dental Fillings and the Like—William H. Taggart, Chicago, Ill. Original application filed January 12, 1907. Serial No. 351,918. Divided and this application filed July 12, 1907. Serial No. 383,481. Claim.—1. In a device of the class described, the combination with a flask and a cover therefor, of a sprue former mounted on the cover and adapted to support a pattern. 2. In a device of the class described, the combination with a flask and a cover therefor, of a sprue former removably mounted on the cover and adapted to support a pattern. 3. In a device of the class described, the combination with a flask and a cover therefor having a projection adapted to form a depression in the mold to serve as a crucible for melting metal, and a sprue former mounted on the projection and adapted to support a pattern. 4. In a device of the class described, the combination with a flask and a cover therefor having a projection adapted to form a depression in the mold to serve as a crucible for melting the metal, and a sprue former removably mounted on the cover on the projection and adapted to support a pattern. 5. In a device of the class described, a sprue former provided with means for securing it removably to a pattern to support the same. 6. In a device of the class described, a sprue former having a pointed tip adapted to be inserted in a plastic pattern to support the same.

Fig. 4.

866,176. Artificial Denture—Francis Ainsworth, St. John, New Brunswick, Canada. Filed May 3, 1906. Serial No. 314,918. 1. A device of the character described comprising a hollow metallic shell adapted to be attached to the outer side of a dental plate, and provided with a longitudinal recess therein adapted to receive cement by which said device is secured in position.

Fig. 5.

866,963. Dental Bur—Carl Rauhe, Dusseldorf, Germany. Filed July 9, 1907. Serial No. 382,824. Claim.—1. A dental bur provided with a head having teeth, grooves separating the teeth, and a pair of diametrically opposed additional grooves converging toward the apex of the head to form an apical cutting edge between the teeth, substantially as specified.

Fig. 6.

866,559. Dental Plate-Punch—Edward E. Bartram, Los Angeles, Cal. Filed January 18, 1907. Serial No. 352,977. Claim.—1. A punching machine, comprising a frame or support, a cross head movable in said support, a relatively stationary punch secured to said cross head, a

relatively adjustable punch holder connected to said cross head, said adjustable punch holder also carrying a punch, a die-plate composed of a stationary section and a relatively movable section, and means for simultaneously adjusting the adjustable section of the die-plate and the adjustable punch holder.

FOR SALE.

I will sell the exclusive U. S. right to my "Fountain Adjustable Tooth Brush"; it carries the tooth wash in the handle the same as a fountain pen does ink; a money maker for any one who has the money to put it on the market.

Address Box 1, Southwest City, Mo.

FOR SALE.

Practice outfit and location in one of the best cities in Iowa. Population 30,000. Reason for selling, must change climate on account of wife's health. Address H. B. J., AMERICAN DENTAL JOURNAL, Masonic Temple, Chicago, Ill.



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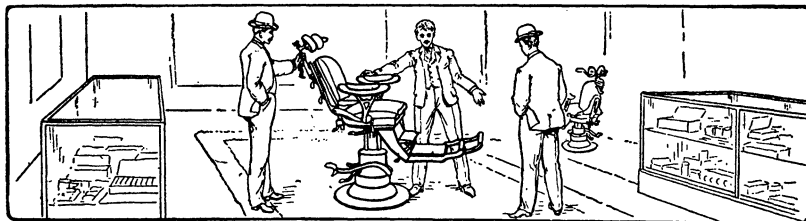
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DECEMBER,
1907

Volume VI.
Number 12.



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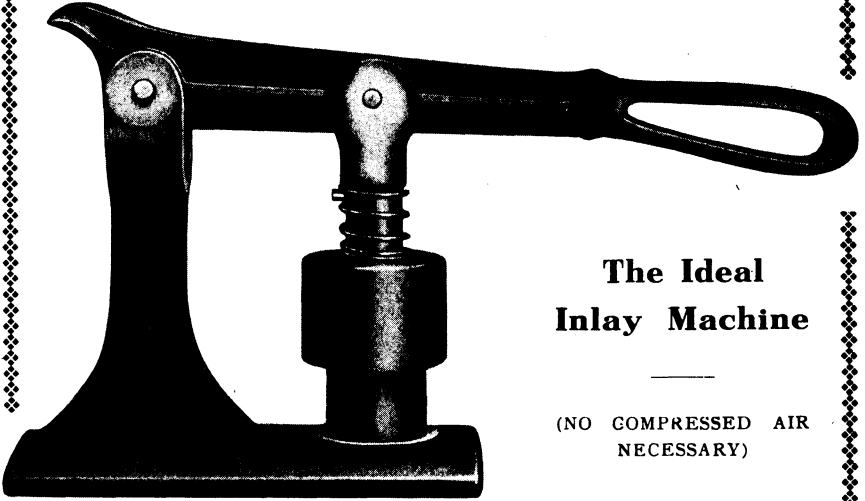
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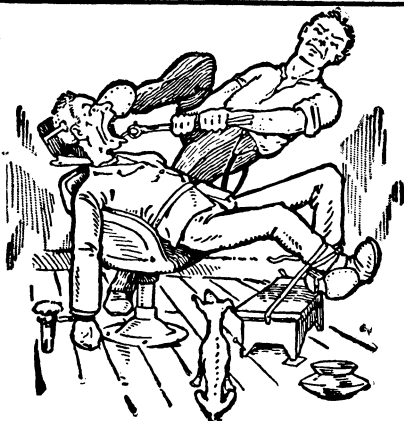
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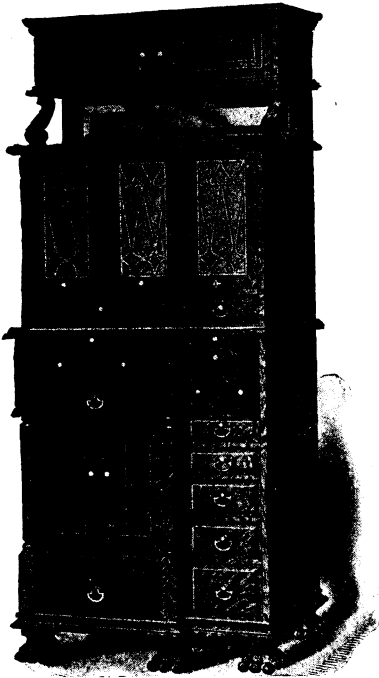
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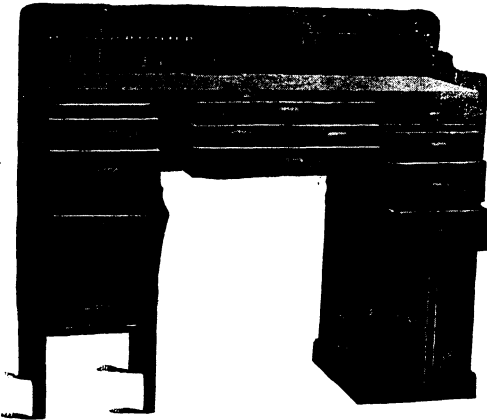
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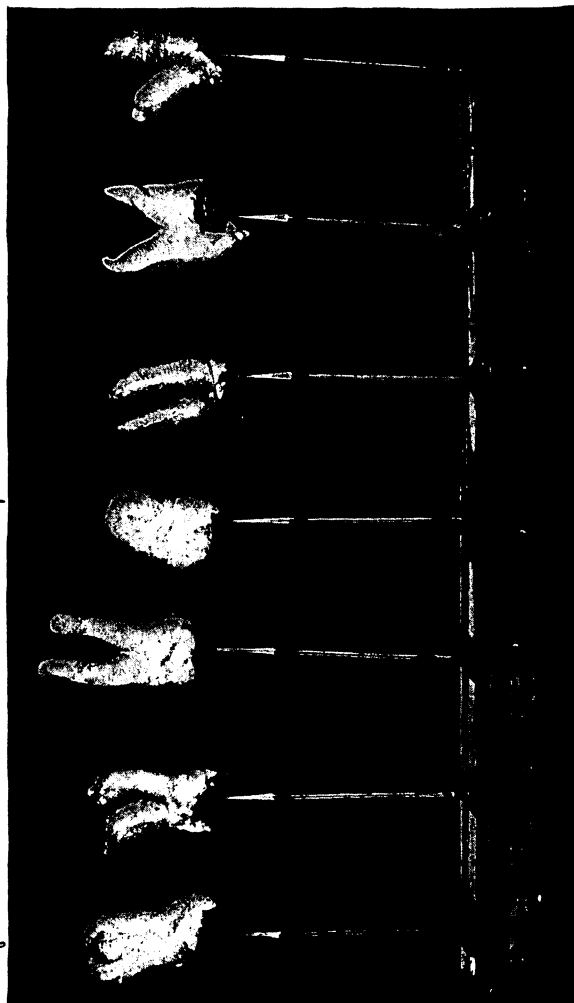
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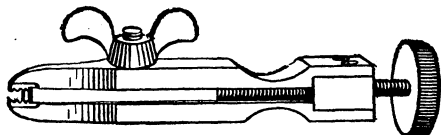
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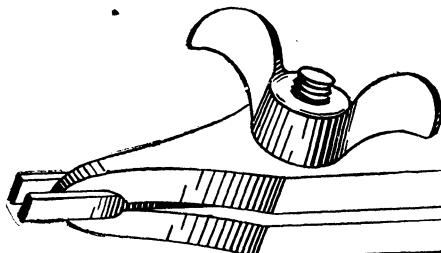


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are sometimes very annoying. They burn out when you least expect it. WHY SEND THEM AWAY? Give them to me and they will be

REPAIRED

and returned to you the following morning. I also make all kinds of muffles to order and do it

PROMPTLY

Satisfaction
guaranteed
and prices
reasonable.

H. R. BARKMEYER, General Dental Electrician

709 Masonic Temple, Chicago.

Phone, Central 1841

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EXCELSIO

**As The Hero
Of Longfellow's Poem Did**

so do we plant our colors beyond the reach of all competitors in so far as concerns the quality of Nerve Broaches.

Our **Excelso Improved Nerve Broaches** are the result of years of experimenting with all makes of wire in both United States and Europe. The difficulty was to obtain a broach rigid enough to allow forcing to apex of tortuous canal without being brittle and tough enough to stand cleaning of canal without stripping or bending the barbs. Our Excelso Broaches are barbed on all sides and are cut in form of screw. They are also barbed to extreme end of point so that when forced to apex and rotated the end barb will excise pulp at that point.

OUR OFFER

Send 50 cents for a package of our Improved Excelso Nerve Broaches and if they are not better than any you ever used we will return the money and you may keep the broaches.

FRINK & YOUNG CO., Masonic Temple, Chicago

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College of Dentistry

University of Illinois

DENTAL DEPARTMENT OF STATE UNIVERSITY



EQUIPMENT of entire University, \$3,320,000.00. Dental and Medical Departments—\$625,000.00.

BUILDINGS. The University has twenty-four large structures. The Dental School is a six-story edifice, and covers one-fourth block.

TEACHERS. The University proper has 387 instructors. The Dental Department has 43 instructors and associates.

ATTENDANCE. From 758 students in 1891 the U. of I. now numbers upward of 3,500. Attendance has tripled in two years, making the University fourth in rank of State Universities. **The Dental and Medical Departments together have 1,000 students**

COLLEGE OF DENTISTRY

University of Illinois.

ATTENDANCE. From 758 students in 1891 the U. of I. now numbers upwards of 3,500. Attendance has tripled in two years, making the university fourth in rank of State Universities. The Dental and Medical Dep'ts together have 1,000 students.

SUPPORT. The great and wealthy State of Illinois liberally provides for its maintenance, the State Legislature at this session granting \$734,000.00. Besides the government at Washington annually sends an appropriation of \$25,000.00.

EXPENSES. The operating expenses of the entire University were a trifle less than \$400,000.00; the Dental and Medical Budget more than \$100,000.00.

PROFESSORS. In the Dental School: Cigrand, Cook, MacDowell, Gallie, Eckley, Dittmar, Buckley, Jones, Powell, Roach, King, Steele, Burkholder, Zappfe, Carpenter, Patton, Abbott, McCauley Brothers and Hewett.

COMFORT. The Dental and Medical buildings are both modern—built for college purposes—possessing electric elevators, and all appliances required to make the laboratories, class-rooms and infirmary complete.

LOCATION. The Dental and Medical Departments cover a block—Harrison, Honore, Congress and Ogden Ave. bounding the properties. This point is the centre of the greatest Medical and Dental community on earth, yielding unsurpassed clinical advantages.

RECOGNITION. The Dental Dep't has membership in National Dental Faculties Association.

POLICY. Theory and practice receive equal consideration. When at the college call on Dr. C. E. Jones, Sec'y.

For further particulars address the Dean,
GEO. W. COOK, B.S., D.D.S.
Cor. Harrison and Honore Sts., Chicago, Ill.

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FOR PAIN ABOUT THE TEETH



When to Use Them

FIRST

To ease the nagging and shooting pains while operating; to quiet the nerves, and prevent the headaches and nausea which frequently follow operations, administer one Antikamnia & Codeine Tablet every hour

— GIVE ONE BEFORE BEGINNING OPERATION —

SECOND

One Antikamnia & Codeine Tablet given before and another one after extracting a tooth, will stop pain and allay irritability

THIRD

When a painful cavity exists, or a nerve or root is exposed, administer internally one or two Antikamnia & Codeine Tablets and fill the cavity with the powdered tablet, or apply it freely about the gums

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For toothache, earache and facial neuralgia, administer one Antikamnia & Codeine Tablet every two hours

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FOR PAINLESS EXTRACTION

"Sold 'round the world" by all good dealers at the following prices:

1 Ounce,	-	-	-	75 cts.	2 Ounces,	-	-	-	\$1.50
10 Ounces,	-	-	-	-	-	-	-	-	\$5.00

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ST. LOUIS, MO., U. S. A.

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CHAIRS.

1 Keller Columbia Round Base.....	\$40.00
1 Morrison, good condition, leather.....	35.00
1 Gould Chair, newly reupholstered.....	35.00
1 Gould Chair	30.00
1 Leg Wilkinson	45.00
1 Folding Chair	6.00
1 Folding Chair, can be raised and lowered.....	9.00
1 High-Low Gould Maroon Plush, good condition.....	75.00
1 4-Leg Gould Chair, practically new, good condition.....	25.00
1 Columbia Chair, fine condition.....	90.00
1 Leather Upholstered Morrison, good condition.....	40.00

CABINETS.

1 Cabinet	\$20.00
1 Harvard Cabinet, new \$100	60.00
1 Harvard Cabinet, new \$45.00. Has mirror front 30x16.....	25.00

ELECTRIC FURNACES.

1 Turner Porcelain Furnace, new \$27.00.....	\$18.00
1 Bosworth, new	20.00
1 Roach Furnace with Brewster Body and Brewster Press.....	50.00
1 Peck Continuous Gum Furnace.....	35.00
1 Special Continuous Gum Furnace, with fine rheostat and cooling oven, snap	40.00
1 Pelton Furnace	25.00

ELECTRIC ENGINES.

1 Victor Motor, 110-volt, direct.....	\$18.00
1 Motor and Rheostat	10.00
1 Victor Engine, up to head all for storage and including same....	40.00
1 Mason Electric Engine, for 110 v. direct current, latest pattern, motor controlled direct from foot controller, complete to engine head	45.00
1 Ritter No. 17 Wall Pattern, All-Cord Engine, for direct current, complete with Doriott hand piece.....	100.00
1 S. S. W. Electric Engine for 110 v. 60 cycles, alternating current, consisting of Emerson lathe motor, mechanical speed device, ceiling pulleys and engine arm, SNAP.....	50.00

ENGINES.

1 Clark Engine with No. 7 Hand Piece.....	\$30.00
1 S. S. White Foot Engine.....	18.00

BARGAINS—Continued.

VULCANIZERS.

1 Philadelphia Vulcanizer	\$12.00
1 Whitney 2-Case	7.50
1 Hayes 2-Case	6.00
1 Lewis Cross Bar, new \$18.00.....	12.00

FOUNTAIN SPITTOONS.

1 Clark Double Bowl (metal).....	\$30.00
1 Clark Double Bowl (glass).....	45.00

MISCELLANEOUS.

Eucaïne Tablets, former price 50c, now.....	\$.25
1 Davis Angular Hand Piece, with slip joint.....	6.00
1 Slip Joint and Connection for Doriott hand piece.....	6.00
1 Improved Donaldson Press with 2 Flasks.....	2.00
1 Century Swager, new, \$35.00, never used.....	25.00
1 Yaeger Mouth Lamp, for 110 volts.....	3.50
1 Battery Mouth Lamp	2.50
1 Hurd Outfit, complete with two cylinders and 200 gals. gas.....	22.00
Large number of Forceps, all makes.....	1.50
1 Sharp Furnace	10.00
1 U. S. Obtunding Syringe, new, \$8.00	4.00
1 Ivory D. B. Separator.....	2.00
1 Weaver Obtunder, new, \$12.00; A1 condition.....	6.00
1 Turner Furnace, No. 16, new \$10.00.....	5.00
1 Box Brewster Body	5.00
1 Lyons Swager, complete.....	20.00
1 Lathe Wheel	4.00
1 Lathe Head, 2 Chucks	4.00
1 Lathe Head	2.00
1 Turner Furnace	9.00
1 Turner Torch	4.00
1 Hatch Clamp	1.20
1 Automatic Mallet	1.00
1 Pelton Furnace	25.00
1 Operating Stool, new \$15.00.....	10.00

Lot of small instruments,
Excavators, Burnishers, Scalars, etc., half price.

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PRICE

Per oz.

\$1.50

5 ozs.

\$6.50

Has

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of an inch
Expansion

Is malleable and can be burnished over marginal edges. Will keep its color in any mouth in which gold will remain bright. Has very high crushing resistance.

Modified from a formula in use for thirty years. A perfect chemical compound made to conform to recent scientific investigations. As nearly perfect as chemically pure metals, skillful manipulations and scientific experimentation can produce.

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ORDER 15
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ORDER 15
NOW

Pyorrhoeol

THE DENTAL PROFESSION
Treatment of Pyorrhoea and all Discharges of the Gums.
Tightens Loose Teeth. Removes Tartar.
Arrests Decay. Freshens the Breath.
Whitens, Cleanses and Polishes the Teeth.
Wholesale and Retail Agents of THE DENTAL PROFESSION
183 Broadway, New York
Price One Dollar

Pyorrhoeol is the most effective and most reliable discovery in dental therapeutics. It can be used most effectively in the treatment of all discharges of the gums, and it rapidly reduces and removes the tartar which accumulates on the teeth. It is the only preparation that can be used in the treatment of all discharges of the gums, and it rapidly reduces and removes the tartar which accumulates on the teeth. It is the only preparation that can be used in the treatment of all discharges of the gums, and it rapidly reduces and removes the tartar which accumulates on the teeth.

THE DENTINOL & PYORRHOECIDE CO.
183 Broadway, New York
Sole Agents for U. S. and Canada
Wholesale and Retail Agents of THE DENTAL PROFESSION
183 Broadway, New York
Price One Dollar

Pyorrhoeol is a powder compounded from medicinal drugs - containing the active principles of such drugs only as possess the highest degree of activity in healing all inflammation and ulceration of the gums. While it is effective in the removal of calcareous deposits on the teeth, it does not contain acid of any character, nor any matter liable to impair the tooth structure. Its merit is recognized in any profession by its endorsement. We do hereby guarantee that the contents of this bottle is not adulterated, and is pure and of the highest quality. Food and Drugs Act of 1906. THE NATIONAL DENTAL CO. New York, N.Y.

This preparation is distinctly medicinal, containing the most valuable active ingredients known - acting upon the gums, and it is undoubtedly the most valuable discovery in dental therapeutics. It can be used most effectively in the treatment of all discharges of the gums, and it rapidly reduces and removes the tartar which accumulates on the teeth. It is the only preparation that can be used in the treatment of all discharges of the gums, and it rapidly reduces and removes the tartar which accumulates on the teeth.

FOR SALE AT
ALL DENTAL DEPOSITS

Chicago College of Dental Surgery

DENTAL DEPARTMENT VALPARAISO UNIVERSITY.

FOUNDED IN 1880

2420 GRADUATES

HAS CONTINUED UNDER THE MANAGEMENT OF ITS FOUNDERS SINCE ITS ORGANIZATION.

THE TWENTY-SIXTH ANNUAL COURSE OF INSTRUCTION WILL
BEGIN OCT. 7, 1907, ENDING ABOUT JUNE 1, 1908.

INSTRUCTION IS COMPLETE IN EVERY DETAIL.

THE CLINICAL MATERIAL IS ABUNDANT, WHILE THE COLLEGE BUILDING AND ITS
EQUIPMENT OFFER UNSURPASSED FACILITIES
TO THE DENTAL STUDENT.

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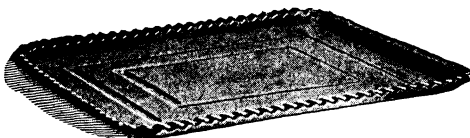
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770 W. HARRISON ST.

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The Griswold Sterilizing Tray

For the Bracket Table



Seven Reasons Why You Should Use It

- 1st—It is clean and neat, patients always remarking its hygienic merits.
- 2nd—Increases the capacity of your table, the edges being fluted so instruments stay where they are put, with the points always towards you, easily picked up and no rolling or falling off.
- 3rd—Will not stain with drugs, easily washed, and always has polished white surface.
- 4th—You save its cost in paper napkins or laundry in a short time.
- 5th—Your table is instantly cleaned when through with patient, as it is removed, instruments and all and another Tray substituted.
- 6th—To use as a sterilizer, place over laboratory stove with a little water, reversing points, soon boils on account large heating surface, sterilizing points and shanks, yet handles are not heated, so they can be quickly wiped and returned to case.
- 7th—Made to fit large size tables; small ones made larger by its use. Made of extra heavy steel plate, double coated with white porcelain, with blue edges.

Two sizes, 18x18, for Allen Table and 19½x14½ for Holmes.

Indestructible if used right.

Price: First quality, \$2.00 each.

Order from your dealer or direct from

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C. N. REESE, D. D. S.



GEO. W. WIEDHOFFT, D. D. S.

Doctor

Are You Aware—

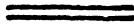
That we are the leading dental laboratory firm of America?

That our product is recognized by discriminating dentists as the Standard of excellence?

That we enjoy a larger local patronage than all other Chicago laboratories combined?

There **MUST** be a Reason

Shall we send you Illustrated Catalogue
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Chicago Dental Laboratory Company

DRS. REESE & WIEDHOFFT

65 Randolph Street

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Up-To-Date D. D. S.

Realize that neatness in office dress is as essential as other qualifications.

Therefore to attain this address a postal request to D. D. S., Coat Department.

Overdier Mfg. Co.

No. 10 Fifth Ave., Chicago, Ill.

FOR CATALOGUE

Northwestern University Dental School.

This School offers exceptional advantages to young men and women for the study of Dentistry. While great attention is paid to the teaching of technic and theory, practical instruction to develop operative skill and dexterity and quick diagnostic judgment is not overlooked. The graduates of this School are admitted to examination for practice in every state.

The Faculty is composed of a large staff of experienced teachers.

The equipment and apparatus of the School are especially designed for the successful teaching of modern dentistry. Its large clinic rooms for operative and prosthetic dentistry are unequalled anywhere. The opportunities offered students for special preparation to enter independent practice are not exceeded by any other school.

Advanced students are permitted to remain in school under clinical instructors during the months intervening between the regular annual courses, the great clinics being open continuously the year round.

For the accommodation of practitioners who desire to obtain instruction in the more recent methods and materials employed in dental practice, this School conducts a POST GRADUATE COURSE during the month of June of each year.

The school year covers thirty-two weeks of six days in each, of actual teaching. The next annual session begins October 1st, 1907.

For further information address Secretary of the Dental School, Department "D", Northwestern University Building, Chicago.

CARROLL'S DENTAL CLAMP and MATRIX COMBINED

Patented July 26, 1904.

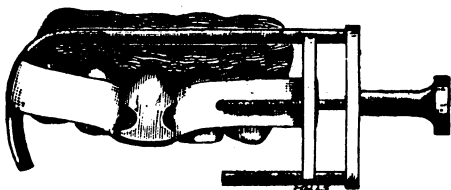


Fig. 1

ribbon may be brought to a tension sufficient to support all the pressure that is necessary in condensing a gold filling at the same time perfectly contouring the lingual and approximal surfaces of the gold. Fig. 1 shows front view of the clamp properly adjusted for a filling to be made from the labial surface. Fig. 2 shows a posterior view, when filling is to be inserted from the lingual surface.

This device, in the hands of an experienced dentist, saves time and labor, and saves the patient much pain; for when the metallic ribbon is brought to a tension it supports the tooth that is to be filled and unites the strength of three teeth in place of one, to resist the pressure and blows the mallet. In the hands of an unskilled operator, it enables him to make a good gold filling.

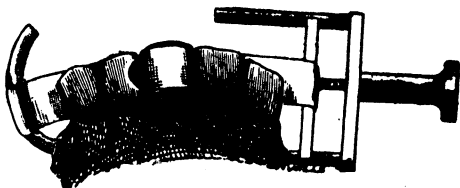


Fig. 2

Prices: \$2.50 with 6 Ribbons; Extra Ribbons 50c. per dozen



CARROLL'S RETAINERS FOR Artificial Teeth

Fig. 1 shows Retainer attached to the plate.

Fig. 2 shows Retainer before attachment.

Fig. 1

Fig. 2



(Patented September 17, 1895; in United States and Foreign Countries)

Retainers do what their name implies; they hold a lower plate firmly and steadily in position.

The muscles of the jaws and cheeks, in their contraction, exert a pressure on the expanded and vertically extending portions of the retainers. This pressure, which is exerted without conscious effort, is the force that holds the lower denture firmly in position on the alveolar ridge.

Retainers are made of Aluminum.

Prices: One Pair 75 Cents; Six Pairs \$4.00

SOLD BY ALL FIRST-CLASS DENTAL DEPOTS

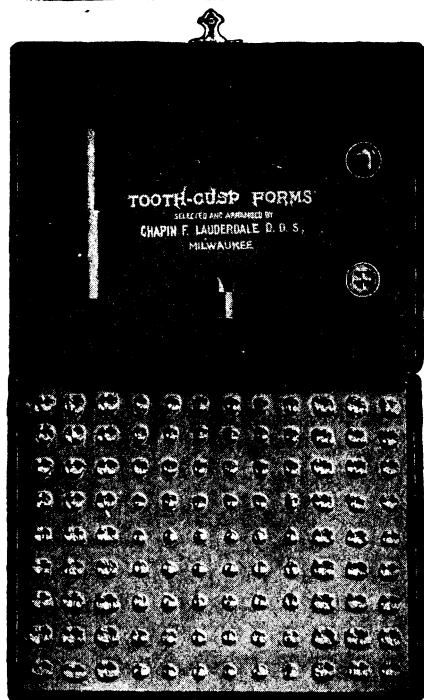
JOHN T. NOLDE DENTAL MFG. CO.,

916 Olive Street

ST. LOUIS, U. S. A.

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The Lauderdale Crown System



Price

\$5.00

Patented May 12, 1903.

With this outfit you can alter the cusps to suit your case. Do away with metal counter-dies. Adjust backings perfectly. Accurately fit vulcanite dummies. Swage matrix for porcelain inlays. Construct shell crowns for anterior teeth. Construct metal dummy shells in one piece. Our booklet contains invaluable hints on this subject, sent on application.

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HERE is what one of the most prominent Dentists in the Northwest says about DEARBORN NERVE PASTE

CHARLES E. HALL, Chicago.

St. Paul, Minn., Aug. 17, '03.

Dear Sir:—Replying to your favor of August 15, with reference to my experience with your Devitalizing Paste, will say that I have used it exclusively for the past two years in all cases when destruction of the pulp was indicated. It is sure death to the pulp, quick and painless. Have had no bad results following its application and have no hesitancy in recommending same very highly. I am,

Yours truly, JAMES E. WEIRICK.

I have hundreds of letters equally as strong. You cannot afford to practice without this PAINLESS devitalizer. Send one dollar for a bottle. Money back if you want it.

CHAS. E. HALL, 21 Quincy St., Chicago

Mounted Carborundum Points

Medium grit for grinding, suitable for gold fillings, crowns and porcelain. Firmly mounted and adaptable shapes.



PRICES.

Each	-	\$.10
Three	-	.25
Per dozen	-	1.00

Frink & Young, 607-608-609 Masonic Temple CHICAGO

METALINE CARVING COMPOUND

Invention of DR. L. P. DAVIS

The great advantages to be gained by this compound may be seen at a glance by the progressive dentist; used in crown and bridge work, may be carved or moulded in any shape, retaining form while melted metal is poured over it making a depression in the metal the exact size and shape of the pattern, i.e., the cusps of a crown or bridge tooth. In fact a full gold or porcelain faced bridge may be constructed in a more accurate manner as to proper occlusion and in less time than by any other method. Is also ideal for obtaining a perfect matrix in inlay work. Send for sample and circular.

FRINK & YOUNG CO., Agents
SOLD BY ALL DEALERS

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LAVORIS

The PYORRHEA Remedy



The Original Zinc Chloride Mouth Wash, one grain to each ounce.

A most phenomenal record made with the profession.

You require Healing Action in addition to the Antiseptics when treating
Pyorrhea alveolaris
Chronic Ulceration
Diseased Antrum
Abscesses
Tender, Spongy or
Bleeding Gums
and all
Unhealthy conditions
of the
Oral Cavity

The Zinc Chloride in
LAVORIS
gives healing action
that
cannot be equaled

FORMULA

EACH PINT CONTAINS

Zinc Chloride	- - - -	1.040
Resorcin	- - - -	0.520
Menthol	- - - -	0.400
Saccharin	- - - -	0.195
Formalin	- - - -	0.195
Ol. Cassia Zeyl.	- - - -	0.780
Ol. Caryophyl.	- - - -	0.195
Alcohol	- - - -	5 per cent

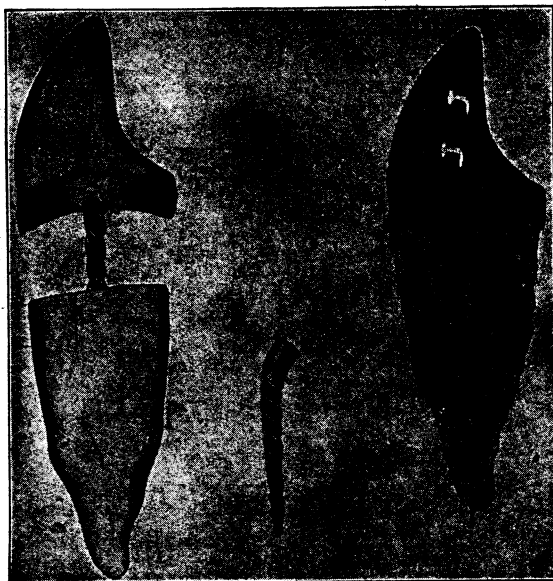
No Acid Used

TRY IT

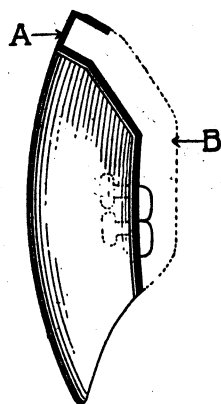
FREE—A regular large bottle with small samples for patients on request from dentists mentioning this journal.

LAVORIS CHEMICAL COMPANY

MINNEAPOLIS, MINN., U. S. A.



This shows how we would make Richmond Crowns for you, using our Spiral Post which is firmly united in solder.



The correct method we employ in backing and tipping porcelain facings for bridge-work, and prevents checking in soldering and mastication.

The advantages of our systems, over others, are too obvious to warrant comment, and are sufficient to establish the confidence needed to acquire your business in all

Laboratory Work

Christopher & Golbeck's

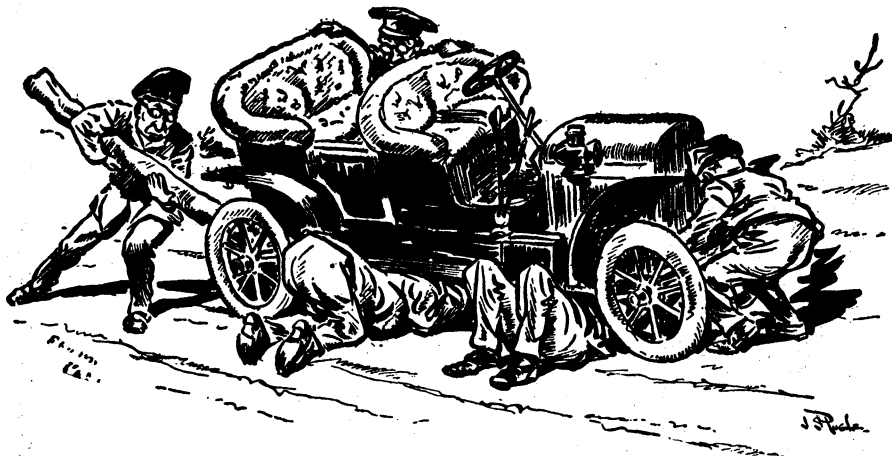
successful construction of laboratory work is due largely to the fact that they are practical workmen and personally construct and supervise each order sent. Send for our illustrated catalog which contains many practical, up-to-date ideas, as shown above, and which you will find of great value.

DRS. CHRISTOPHER & GOLBECK

Rooms 400-401-402

39 STATE ST., CHICAGO, ILL.

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REPAIRS

We know that repair work can be done in a satisfactory manner.

Yes, we know you have tried it before and found it did not pay.

No doubt you know of a patient who patronized a certain Dentist and paid good money for work which was worse than worthless. Is that a good reason why that patient should never again go to a dentist?

Send your repairs to us. The work will be right and at the right price, too.

PRICES:

BURS —Excavating, recut and stoned	per doz.	\$.50
" " " "	6 doz. lots	.45
" " " "	12 doz. lots	.40
" Plug finishing " "	per doz.	1.00
" Larger sizes " "	"	1.20
" Plate Burs " "	"	1.20
" Lathe " " "	each	.40
PLUGGERS —Reserrated	per doz.	1.50
" " and reshaped	"	2.50
EXCAVATORS —Common, repointed	"	.75
" Spoon and special pattern, repointed	"	1.20
CHISELS and SCALERS —Repointed and sharpened	each	.20
FOIL CARRIERS —Repointed and sharpened	"	.30
LANCES —Ground	"	.20
" " and repaired	"	.30
ROOT FACES —Sharpened	"	.10
" REAMERS —Sharpened	"	.10

We Have All the Parts for No. 7 and Other Hand Pieces.

FRINK & YOUNG, 607-8-9 Masonic Temple, Chicago

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Indiana Dental College

INDIANAPOLIS, INDIANA

The thirtieth annual session will begin October 6, 1908.

A College combining the experience of years with the most modern teaching methods known.

For Catalogue and other Information, address the College as above

You Would Not

use an old style instrument. Why
use an old style ledger ? ? ? ?

Now Is Your Chance

We refer you to Frink & Young Co. as to reliability and responsibility.

Commercial Accounting Forms Co.

R. A. Hunter, Mgr.

514 Reaser Block, CHICAGO, ILL.

A well known loose leaf manufacturer needed money and sold us 500 dentists' ledgers way below cost. While they last we make the following offer:

275 Special Indexed Ledger Leaves } \$3.00
1 Special Current Binder }
1 A-2 Index, sent by express C.O.D. }

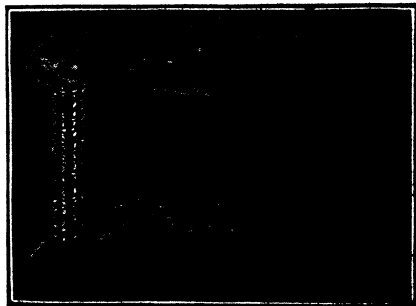
Send at once for sample sheets as these self-indexing ledgers will not last long at the special low price of \$3.00. Extra sheets can always be had from us at 75c per 100.

The Original Adams Mouth Prop

Swivels at top and bottom. Convenient to operate on either side of the mouth. Quickly and easily applied.

Price One Dollar.

For sale by all dental dealers.



FRINK & YOUNG

607-8-9 Masonic Temple

CHICAGO, ILL.

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Coat News!

We wish to announce that the Office Coat Co. has succeeded the late bankrupt firm of Longenecker, Evans & Co., in the **Made to Measure Duck Clothing Business** as conducted by that firm. W. D. Toland, who had charge of the Dentist Coat Department with old house, will continue in that capacity.

It will be our aim to supply the demand for a higher grade garment, fully shrunk and thoroughly reliable.

Our present equipment for carrying on Special Order Work is first class and we promise attention to all details, inquiries and orders. The measures of the old customers are on file. We solicit a trial order. Complete information sent promptly on receipt of request.

OFFICE COAT CO., 254 E. Madison St.
CHICAGO

Pulps Capped Successfully

CARBOL EUGENOL CEMENT

has been saving exposed and almost exposed pulps for over ten years. Its use by 2,000 Dentists in the United States, with complete success. Carbol Eugenol Cement *will not mummify the pulp*, restores health and vigor. An imitation of natural dentine, slightly porous, sets not too hard, is a mild, soothing stimulant, reduces an inflamed pulp to normal condition almost immediately, can be placed over the pulp without the use of rubber dam and will set under the saliva. A perfect germicide; will keep in any climate and never lose its efficacy.

AS A ROOT FILLING

It has no equal, mix thin, pump into canals and force gutta percha canal-point through it. The canals will always remain aseptic, even when coming in contact with the fluids of the mouth. If small particles of pulp are left in canals, CARBOL EUGENOL will preserve them.

IN PORCELAIN INLAY WORK

a little *Carbol Eugenol Cement* placed in the cavity for half hour before setting inlay, seals the tubules, reduces the sensitiveness and prevents the Oxyphosphate having any effect on the pulp. Guaranteed to be as represented or money back. **PRICE, \$1.00.** Ask your dealer for it or send direct to

J. A. WILLIAMS, D. D. S.

Manufacturer

Fort Wayne, - - - Indiana.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

The New Folding Bracket Electric Engine

No. 5 for Direct Current

☐ No. 55 for Alternating Current

Pat. Oct. 4, 1904

A NEW type of engine with many advantages over other forms. Neater, handsomer and better liked from the operative point of view.

Extends until the bracket is nearly horizontal, giving the longest reach possible; or when not in use closes up against the wall, entirely out of the way.

Supports itself at any intermediate position, to suit any position of the chair.

It will take any "Cord" or "Cable Arm" that goes on a Foot Engine.

For those who prefer the All Cord Engine, our new No. 5 Short All Cord Arm when used with this outfit is simply ideal. The weight is entirely carried by the pivotal socket and gives absolute freedom of movement in all directions. The operator feels no weight on the handpiece, and compared with other devices it is as light as a feather.

When using "Cord" or "Cable Arm" the advantages obtained with the Folding Bracket Engine are obvious.

It would be a grave mistake to install any other outfit, when this one will suit you best.

Write to us for circular giving full description.



Price of Engine without Arm for 110 Vt. Direct Current.....	\$105.00
Price of Engine without Arm for 110 Vt. Alternating Current.....	115.00
For Short All Cord Arm Doriot Handpiece and Register Wrist Joint, add...	30.00
For S. S. W. Cable Arm with No. 7 Handpiece, add.....	18.25

Made by the

Electro Dental Mfg. Co., Philadelphia, Pa., U. S. A.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

TRIOLIN

Is a *permanent, speedy and sure cure* for all forms of abscessed teeth.

¶ The most stubborn cases yield promptly to *Triolin*.

¶ *One or two treatments* will, as a rule, remove the cause of an abscessed tooth.

¶ Triolin destroys and neutralizes all poisonous gases arising from decayed animal or vegetable matter—being a thorough antiseptic and deodorizer.

¶ Triolin as a root filling is unequalled as its ease of manipulation, its penetrating and antiseptic qualities, form the ideal qualifications in the treatment of root canals.

¶ Triolin will also be found to fulfill all the qualities of an A-1 mummifier, turning the parts of the pulp left in canals into an antiseptic substance almost as hard as dentine.

Trade
Supplied

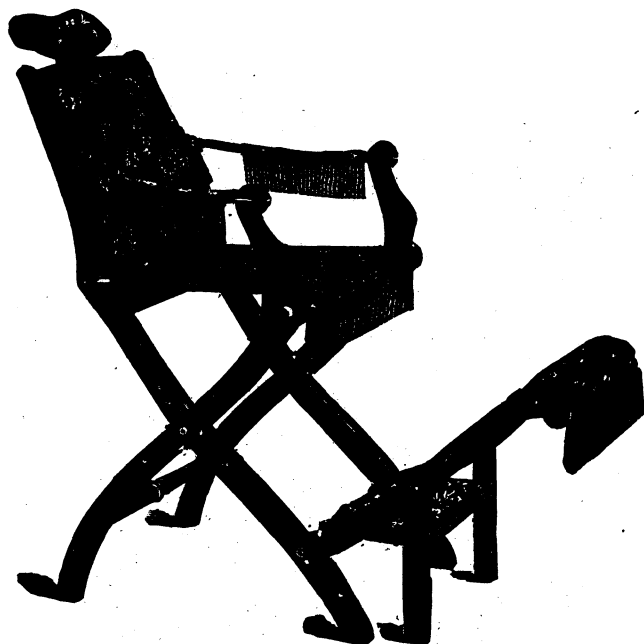
PRICE \$1.00 PER PACKAGE

Trade
Supplied

If your dealer does not keep this, send to

J. A. WILLIAMS, D. D. S., Fort Wayne, Ind.

Our NEW FOLDING CHAIR



Folds to smallest possible size and can be carried under the arm. Is handsomely finished, strong, durable, light, weighs only 26 pounds, and is

The biggest bargain at \$12 ever offered
With Cuspidor and Holder, \$13.50

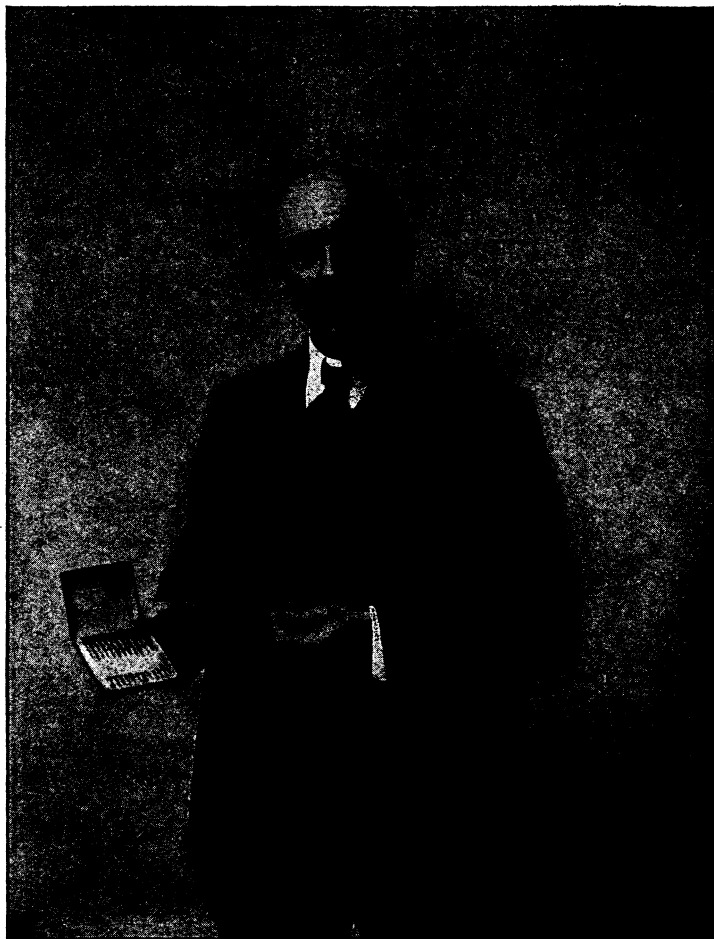
FRINK & YOUNG CO., Chicago
MASONIC TEMPLE

THE MAN RESPONSIBLE

He has prepared every ounce of WILSON'S LOCAL ANAESTHETIC for years. He knows that every ounce is sterile when it leaves our laboratory. JUST ONCE, and for 25 cents, he will mail you a

75c. BOX OF WILSON'S AMPULES (Local Anaesthetic)

An hermetically sealed glass tube, filled in a vacuum, twice sterilized, and guaranteed aseptic. One box of the Ampules will convince you that the preparation has no superior at any price, and the Ampules will appeal to you as they make contamination impossible, and are more convenient to use than by the ounce.



For sale at all depots at 75 cents a box of one dozen. One and two ounce bottles at 75 cents per ounce.

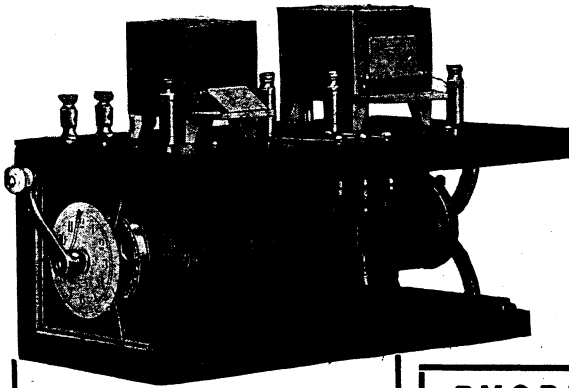
Manufactured by the **CENTRAL CHEMICAL CO.**
Wellsville, N. Y., U. S. A. 34 Rue de l'Echiquier, Paris, France

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

American Dental Journal,
Chicago, Ill.

Your letter received and we note your remarks as to whether we are going to stay with your Journal, as to our ad, and we are glad to say if all our ads would pull like the "AMERICAN DENTAL JOURNAL" ad does we would be satisfied, as a great many do not pay more than for the space in goods.

Very truly yours,
EUREKA SUCTION CO.



The Matteson Furnace

is now in the market and for
sale by

FRINK & YOUNG

or by A. E. MATTESON,
3908 Cottage Grove Avenue,
Chicago, Ill.

PYORRHEA

Owing to the value of Sal Hepatica in the treatment of diseases of the uric acid diathesis it has been found specially beneficial in pyorrhea alveolaris, a malady in which rheumatism and gout are potent causes. It contains the salts similar to the celebrated Bitter Waters of Europe, fortified by addition of Lithia and Sodium Phosphate. It stimulates liver, tones intestinal glands, purifies alimentary tract, improves digestion, assimilation and metabolism.

Write for free samples.

BRISTOL-MYERS CO.
BROOKLYN-NEW YORK



Nerve Qui-e-tus is the new devitalizer and obtunder of dentine.

It is safe, sure, and convenient and painless in its effect. It renders the tooth non-sensitive, so that the operation of dressing out the cavity and filling the tooth is accomplished at one sitting, while the operator and patient laugh and talk about other things.

Doctor, throw away your preparations of arsenic. I have not devitalized a tooth with so-called Nerve Paste (which is true arsenic) during the last fifteen years. I have used N. Q. in over 5,000 teeth and the less than a dozen teeth I have lost in that number has been due to my work, and certainly not to the method.

You won't need your nerve extractors. You will find use for them only in putrescent canals. No canal will become putrescent where my method is used.

But two sittings are required. One to apply the devitalizer No. 1, and the next, four days later (the time may safely be deferred to even a month if the preparation is well sealed in), remove the application and fill. When you remove the devitalizer, fill the tooth at the same sitting. You simply use a large burr, the size to be governed by the size of the tooth operated on. Let the burr be sharp and round. Dress out the pulp chamber. If the burr is sharp it will shave off the nerve and not drag it or have a tendency to drag it out of the canal. This would cause pain, too. Do not remove the nerve from the roots. By this method they make a perfect and everlasting root filling.

Nerve Qui-e-tus No. 2 serves an important part in the treatment and lasting results, although it is apparently a simple liquid, and is simple to use. But without its use you would sometimes fail.

The whole operation of filling by this method requires usually not over a half hour, where amalgam filling is used. No tooth will ever abscess or even cause swelling. Neither will any discoloration ever take place.

And, moreover, No. 1 is the best and safest dentine obtunder ever used. You can apply it to a sensitive tooth, sealing it in from 6 to 8 hours or even longer if much dentine intervenes, and on removal of the obtunder you can drill the tooth without causing any pain, and no after trouble will ensue. (Read this again.)

Hundreds of dentists are using it exclusively, and the opinion of Dr. D. A. Lane, Manor, Texas, after using N. Q. is the opinion of all. Here is what he writes:

"Send me a \$5.00 package at once. I am entirely out and it makes me want to go fishing until I get some more."

Enough for forty or fifty cases of both 1 and 2 for \$1.00.

If your local dealer has not got it order of

FRANK & YOUNG, Chicago, Ill., or of DR. MILES O. PERKINS, of Beaumont, Texas, who is the inventor and exclusive manufacturer.

P. S. Doctor, be independent. Don't do without the excellent medicine which will save you labor and money. Save your patients' teeth and save them pain, and insure their gratitude and friendship. That you do not know its composition should not deter you. That is an old foggy and foolish notion. I assure you it is not as bad as arsenic.

MILES O. PERKINS.

Dr. J. M. Cain, San Antonio, Texas, after using N. Q. about eight years, writes: "I have never met you but hope some day you will be given due credit for the introduction of such a valuable aid to the dentist."

LUDLOW'S MINERAL COMPOUND.

**A Fire-Proof Investing Material for Dentists use,
A Non-conductor that will not Shrink in the Fire.**

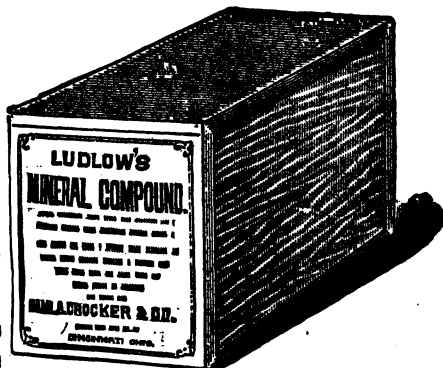
We Guarantee : —————

1st.—That it will not crack or shrink under any degree of heat.

2nd.—That each tooth will be held firmly in position from the time investment is made, until the work is completed.

3rd.—Bands and wires are unnecessary; when the compound is set, it remains firm without their use.

4th.—It is impossible to crack a tooth while soldering.



Dentists who are using this compound are relieved of all anxiety as to the outcome of their work. It is an insurance that each piece will be perfectly completed. A free sample will be sent to you upon request and receipt of 10 cents to pay for packing and postage.

PUT UP IN 4 lb. Package.

PRICE, \$1.00

SAM'L A. CROCKER & CO.,

SOLE AGENTS,

85, 37 and 39 W. Fifth Street,

CINCINNATI, O.

Our St. Louis House

Frisco Building
Ninth and Olive Streets

IS NOW IN FULL SWING,
WE HAVE THE FINEST
LOCATION IN THE CITY
AND THE

best dental depot in the west

ORDERS WILL BE HAN-
DLED IN THE SAME
CAREFUL MANNER THAT
HAS MADE OUR KEO-
KUK HOUSE FAMOUS

Better and quicker service than
you can secure elsewhere is the
basis upon which your patron-
age is solicited.

The O'Brien Worthen Co.

Mail Order Dental Depot

Sherrill Building
Keokuk

Frisco Building
St. Louis

Thomas J. Dee & Co.

**Gold and Silver Refiners
and Sweep Smelters** 

**67 and 69 Washington Street
CHICAGO, ILL.**

**We are Large Refiners of Precious Metals and
we make a Specialty of Refining**

**Bench Sweepings
Scrap Gold
Scrap Platinum
Gold Filings
Floor Sweepings
Old Rugs and
Old Carpets**

In Fact, Anything Containing Gold or Platinum.

**Prompt and Accurate Returns Made in Cash
or in Gold.**

ASCHERS ARTIFICIAL ENAMEL

Protected by United States Patents
Nos. 771,183 and 177,184

Patents Protected
by the
Patent Title
and
Guarantee Co.,
New York.

**The inventor Guarantees that no injurious ingredients
enter into this material.**

**The genuine is sold only in maroon boxes, with the name
"C. H. PINCHES" on Label. Accept no imitation.**

The Pinches Dental Mfg. Co.

1181 Broadway, New York City

**By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will
confer a favor upon both the Advertiser and the Journal.**

FACTS

We take pleasure in submitting to the profession a new set of directions which have just been issued by the inventor and chemist of the material. These directions should be read very carefully and the material should not be used the mouth until the operator understands perfectly what is set forth. Ascher's Artificial Enamel is a chemical product that must be compounded under these conditions to get the result intended by the inventor. If it is used in ANY OTHER MANNER any possible failures will be the fault of the operator, but not of the material. Using this method failure in any case is absolutely impossible.

Read these directions very carefully

Prepare the cavity carefully, having ample undercuts and square margins wherever possible. Dry cavity carefully with alcohol. Use a bone or ivory spatula and have all instruments and your slab **scrupulously clean**.

The **entire quantity** of acid placed on the palate must be used up in the compounding. To begin, mix a quantity of the powder which in bulk appears almost time as much as the quantity of acid on the slab, without at first using heavy pressure; then the powder is added **continuously** in small quantities, still using only a light motion with the spatula, but not spreading the material out any more than possible.

When the mixture appears of a soft, uniform consistency, add more powder until the compound becomes so stiff that it is difficult to stir with the spatula; no time should be lost in unnecessary scraping of the slab, but mix the paste **quickly** by spreading it out **slightly** with the flat side of the spatula, turning same in hand so as to use both sides alternately.

Continue to add the powder in small quantities and mix the compound with both sides of the spatula, using a **stronger** pressure, and scraping the mass together frequently from the full width of the surface over which it has spread. Be careful to see at this stage of the process that **all the powder to be compounded** has been used up.

Mixing should be stopped as soon as the paste has become thick and of a tough consistency. This will be indicated by **RESISTANCE IN COMPOUNDING THE MATERIAL, WHICH WILL CURL OVER IN THE DIRECTION OF THE MOVEMENT MADE WITH THE FLAT SIDE OF THE SPATULA.**

The principal point to observe in the compounding is that the **fresh powder is continuously added in small quantities**. Scraping the slab and stirring the paste without adding the powder as above described, only results in making the paste stiff and tough before the full quantity of powder has been used up. The final heavy pressure is only **after** the paste has become tough. The entire process requires as much dispatch as possible.

The enamel **must not be touched with the fingers** or otherwise kneaded than already described, and should be inserted into the tooth directly from the slab, after the manner of amalgam, and with considerable pressure—**WITH ABSOLUTE-
LY CLEAN INSTRUMENTS ONLY, AND WITH NO OILY SUBSTANCE.**

AFTER your margins are well sealed and the material slightly hardened same may be finished and polished with suitable instruments of agate, tortoise or ivory or celluloid discs or strips well coated with vaseline. The use of coarse cuttlefish discs will often inflict numerous scratches on the surface of the material and destroy the true color.

Cleanse the filling with alcohol, cover with paraffine and keep **absolutely dry for at least fifteen minutes.**

All bottles should be kept corked whenever possible and no foreign substance allowed in either the liquid or powder.

Gutta-percha smeared over the bottom of the cavity can often be used to good advantage.

Remarks regarding the acid

The liquid being a solution, changes its condition when left standing for some time, the ingredients forming successive layers and should therefore be thoroughly shaken or stirred with the glass rod before using.

As the deposits of a solution are always heavier on the side walls and increase in density in the bottom layers, owing to their specific gravity, the residue of a bottle of the acid, which has almost entirely been used up, **CANNOT BE USED** for mixing the compound as the solution has become too concentrated. The reason for this is that it would involve the danger of the cement hardening too slowly, and when exposed to the action of the saliva as usually happens after fifteen minutes, would become mixed with it.

If Ascher's Artificial Enamel is mixed according to the above directions the operator will not require the last fourth of each bottle of liquid. It is better to throw this away to get perfect results.

The liquids must not be mixed, although all is of the same nature. The liquids of any other preparation must not be used with our powder as they are all totally different.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

INTERESTING INFORMATION

Ascher's Artificial Enamel, the original and only genuine berrylium aluminate translucent filling material, has now been on the market over five years and stands today recognized as the leading filling material of the world.

The many worthless imitations that are still attracting a little attention in this country, are already almost forgotten in Germany, where they made their appearance about two years ago.

Our product is patented in all countries of the world and contains the highest grade of materials that money can procure. The colors are all ground porcelain and the material will retain its shape in 3,900 degrees. The cost of manufacturing our material is over ten times as great as any cement in existence, on account of the use of berrylium and other ingredients covered by our patents.

Our European laboratories are the best equipped in the world and our chemists are the most noted in Germany. Ascher's Artificial Enamel today stands as an **absolutely perfect** filling material.

We would strongly advise all customers to order two or three months in advance, as we shall apparently never be able to fill our orders promptly, notwithstanding the many additions to our factory.

In ordering Ascher's Artificial Enamel be sure that it is in a **maroon colored** box with the words "Ascher's Artificial Enamel" in gold on the top of the box and the name C. H. Pinches on the label. None other is genuine. No other cements in the world have the slightest connection with our material.

No attention paid to any mail orders unless accompanied by cash.

PRICE LIST

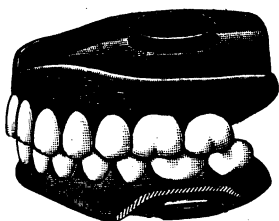
Small Sample Box, one color, half portion.....	\$ 2.50
Sample Box, one color, full portion.....	4.00
Assorted Box, four colors, half portions.....	9.00
Assorted Box, ten colors, half portions.....	18.00
Assorted Box, six colors, full portions.....	20.00
Assorted Box, ten colors, full portions.....	33.00
Assorted Box, six colors, double portions.....	40.00
Pure Ivory Spatulas, double end.....	2.00
Bone Spatulas, double end.....	.25
Agate Burnishers, round, inverted cone, bud and barrel shape, for hand or No. 7 handpiece, each.....	1.00
Tortoise Shell Burnishers, cone socket.....	1.00
Celluloid Strips of Disks, per box.....	.25
Shade Rings, porcelain.....	1.00

SHADE GUIDE

No. 1, Light Yellow; No. 2, Pearl Gray; No. 3, Green Gray; No. 4, Brownish Yellow; No. 5, Reddish Yellow; No. 6, White; No. 7, Gold Yellow; No. 8, Dark Brown; No. 9, Greenish Yellow; No. 10, Light Brown; No. 11, Pink.

Ascher's Artificial Enamel is sold under a strong money-back guarantee when the above directions are closely followed — not otherwise.

By mentioning the **AMERICAN DENTAL JOURNAL** when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.



DON'T BE DECEIVED

When you want results use the improved "Eureka" for both UPPER and LOWER Dentures and increase your plate work.

Sold by all leading Dealers at the following prices:—
Upper Denture—\$2.00 per box of six Suctions.
Lower Denture—\$2.00 per box of three sets.

"Full and simple direction with each box"

EUREKA SUCTION CO., LOUDONVILLE, OHIO

THIS LITTLE SPACE

It's not a miracle why some reliable dentists find my ads of such public service and winners of new patients after a severe test, that the highest commendation is linked with indispensability.

Present day advertising demands more than your name to create a curiosity to call. The public is demanding talk in type that is instructive and original—direct to the point. One reason my ads interest first class dentists, my patrons say that the *educated people* see the necessity of teeth never before realized. Your name on a postal will bring, What's been Said Without Asking, or Convincing Foreign News.

Address a postal at once to

pierces an immense hole every month through a vast wall made by thousands of dentists, that all dental advertising is quackery.

H. ELFERS, Dental Ad-writer,
6801 Lucerne Ave., Cleveland, O. Desk "E"



No. 1



No. 2

TOOTH CLEANING MANDRELS

These are found very useful in cleaning teeth. Ordinary rubber tubing is used, giving you a fresh and clean piece in every case.

The illustration shows how the rubber is adjusted.

Dr. A. W. Harlan suggests and recommends the smaller size (No. 2). These Mandrels save time and money by the extreme service and by the rapid adjustment of the rubber tubes.

Price, with 6 inches of Tubing, 35 cents each.

FRINK & YOUNG, 606-607-609 Masonic Temple
CHICAGO, ILL.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

What Dentists Say About

Puscure

TRADE MARK

GADSDEN, ALA., Dec. 19, 1900.
Morrison Bros., Nashville, Tenn.

GENTLEMEN: I have put the box of Blair's PUSCURE to the severest test, and I delight to say that not in a single case did it fail to give the most gratifying results. I have been in active practice for more than twenty years, have tested many root canal preparations, and for efficiency and persistency it has no equal. Certainly it justly merits all the claims made for it by Dr. Blair. I consider it a perfect root canal dressing, and most heartily recommend it to all who have not tried it.

Very truly yours,
 GEO. S. VANN,
V. Pres. National Dental Association.

LOUISVILLE, KY., Sept. 8, 1906.
Dr. Jno. C. Blair, City.

DEAR DR. BLAIR: PUSCURE is all right. We have cured a number of chronic abscesses with it, and use it altogether for root canal filling. You have certainly found the right combination.

Yours truly,
 A. B. WEAVER, D.D.S.

NASHVILLE, TENN., Oct. 1, 1906.

Morrison Bros., Nashville, Tenn.

GENTLEMEN: I take great pleasure in commending Blair's PUSCURE to the dental profession. It is an ideal remedy and a wonder worker. My first experience with it was on one of the most stubborn cases of abscess I have ever met in my practice. For several months it had worried me and refused to yield to all other treatments. One application of PUSCURE made a perfect cure, making both myself and patient happy and comfortable. Its action is marvelous, and no dentist can afford to be without it.

Very truly yours,
 J. ATCHISON DALE, D.D.S.,
*Professor of Crown and Bridge Work,
 Vanderbilt University.*

LOUISVILLE, KY., Sept. 1, 1906.
Dr. Jno. C. Blair, City.

DEAR DOCTOR: I am out of the wonder worker (PUSCURE) and am obliged to have more at once. Please send me two more bottles.

Yours,
 H. B. TILESTON, D.D.S.

Blair's Puscure WILL DO the Work

YOUR MONEY BACK IF IT FAILS

Price, large bottle, liquid and powder, \$1.50

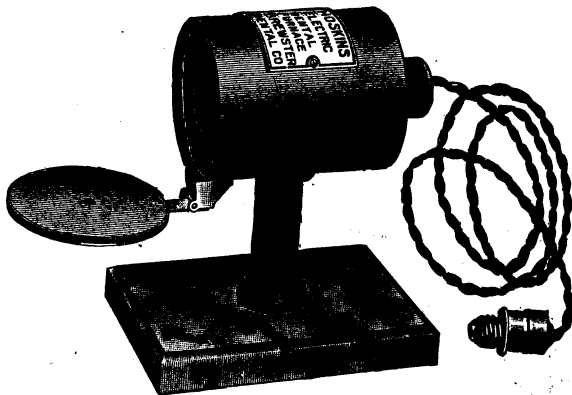
Price, liquid or powder separate, 75 cents

ORDER FROM YOUR DEALER

MORRISON BROS., Sole Agts., Nashville, Tenn.

The Hoskins Electric Furnace

(Patented)



Wound with the new patented wire which has six times the electrical resistance of platina.

This wire is the result of research work carried on for several years by metallurgical experts, and has solved the vexed problem "how to find a substitute for Platina."

Its application to a dental furnace enables us to offer the profession a most efficient and reliable furnace at a price

within the reach of all. Even those having platina wound furnaces find it economical to buy a Hoskins, as by so doing they lengthen the life of the platina wire in their furnace, the repair of which is so costly. An entirely new Hoskins Muffle cost but a comparatively nominal figure, so that a saving is effected both ways.

A further saving is effected in the cost of running, because owing to the much higher resistance of the Hoskins wire over platina their furnace consumes only $2\frac{1}{2}$ amperes against 6 or 7 amperes consumed by a platina wound furnace.

The Hoskins furnace is constructed on the most simple and practical lines. It has fewer parts than any electric furnace in existence, and a new muffle is inserted in 10 seconds, there are no binding posts or screws about it, and no clay or luting of any kind is used in putting in a new muffle.

The muffle inside is $2\frac{1}{4}$ inches long by rather over 1 inch diameter, so that in addition to inlays, it will bake evenly a 5 tooth bridge, or several crowns at a time.

It is connected directly to the ordinary lamp socket and has no rheostat.

Our daily test of the furnace extending over a period of 6 months—proved to us the correctness of the claims made for it by the inventors, and when they offered to give a new muffle without charge should the original one burn out within three months from date of purchase, we quite realized from our experiments that they were taking no chances, and the sales since have proved it.

Our extensive knowledge of furnaces and our reputation in the porcelain business is in itself a sufficient guarantee that the furnace we have taken the sole agency for is satisfactory in every way, but beyond this the Hoskins Company are old established metallurgical chemists and assayers, they have been makers of furnaces dealing with high heats for a great many years, they hold the patents covering the manufacture of this wire and the fact that it is now being used by electrical companies should prove a sufficient assurance to the profession that they are being offered a furnace of unusual value and may purchase with the utmost confidence.

PRICE:

Hoskins Furnace complete, (may be used with either direct or alternating 110 volt current).....	\$25.00
Renewal Muffle.....	3.50

Subject to usual cash discounts.

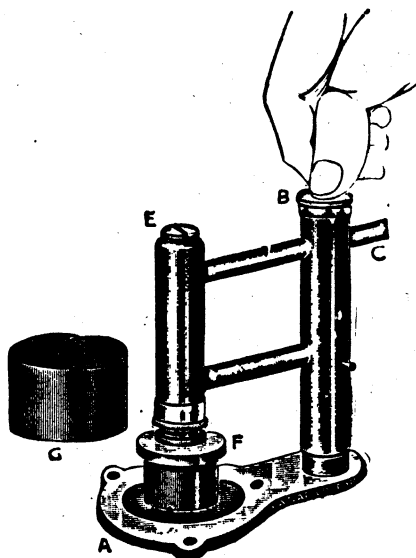
For sale by all dealers in dental supplies, and by the sole agents.

THE BREWSTER DENTAL COMPANY
Chicago Savings Bank Building CHICAGO, ILL.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

The International Casting Machine

**You
Press
the
Button**



**The
Machine
Does
the Rest**

The result of the combined ideas of Drs. Reese, Wiedhofft and Ladewich.

The most practical and easily operated machine ever devised for casting inlays, crowns, bridges, plates or anything that can be designed in wax.

So simple your office girl can operate it.

**Guaranteed to do the work perfectly and to
be absolutely free from patent infringement.**

No Compressed Air or Oxy-hydrogen necessary

Daily Demonstrations at 65 Randolph St., Chicago

Price \$20.00 Including package Investment
Compound and Inlay wax.

FOR SALE BY ALL DENTAL DEPOTS

Manufactured by the

International Inlay Machine Company
65 Randolph Street Phone Cent. 3918 CHICAGO, ILL.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

Black Inlay Wax

It is absolutely impossible to obtain perfect results in Cast Inlay Work unless you use a wax

WHICH—is thoroughly volatile.

—is hard and smooth when cool.

—is soft and tenacious when warm.

—can be shaved to a thin feather edge.

—can be removed from cavity without fear of distortion. Has a dark color in contrast to the tooth structure.

AND

An Investment Compound

Which does not shrink or crack, and leaves a smooth, sharp mold after burning out wax.

The REESE & WIEDHOFFT

Inlay Wax and Investment Compound meet all the above requirements. They are used and recommended by all who seek perfection in cast inlay work.

INLAY WAX	-	-	-	per box	\$0.50
INVESTMENT COMPOUND				5-lb. can	1.00

FOR SALE BY ALL DENTAL DEPOTS.

PREPARED BY THE

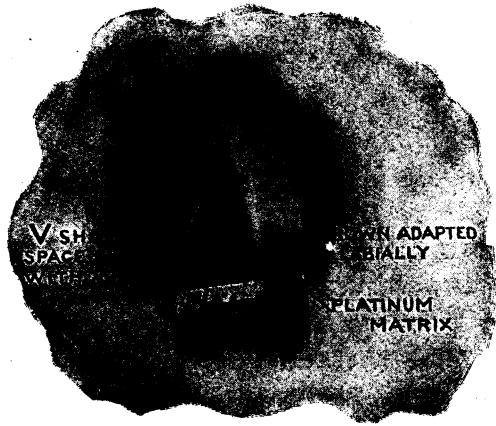
International Inlay Machine Company

65 Randolph Street Phone Cent. 3910 CHICAGO, ILL.

By mentioning the AMERICAN DENTAL JOURNAL when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

De Trey Porcelain Enamel for Adapting Porcelain Crowns.

Quicker, Better and Cheaper Than Grinding.



Grind root as desired. Fit labial portion of crown to the root cutting away on the lingual to make a V-shaped space between root and crown. Fit a matrix of 1-1000 platinum or pure gold No. 80 so as to define the margins of the root, and extend a little up each side.

Put adapted matrix in place on root. Stretch a strip of rubber dam across it from lingual to labial, holding each end so as to bring strong, steady pressure on the matrix. Then thrust the pin of the crown through the dam and matrix and force crown as nearly as possible to position. Without releasing the dam, withdraw the crown and pin. If it be attempted to puncture the matrix without the use of the dam the matrix may be distorted.

Soften a piece of beeswax and place on cervical end of crown about pin. With matrix in position on root force the crown to place. Chill the wax and carefully remove crown, wax and matrix. With any good crown investment that will not shrink under the influence of the heat, fill the root side of the matrix about the pin. Have the investment from one-eighth to one-quarter inch thick. When set, boil out wax. Moisten the V-shaped space and fill with de Trey Porcelain

Enamel, jarring to place and absorbing moisture. Contour the portion as desired, taking care that no porcelain remains on the side of the matrix.

Shape one-half dwt. of 1-1000 platinum to form a blunt ended cornucopia large enough to hold the crown. Place crown in cornucopia, pin up, grasp the tipped back edges of the cornucopia with de Trey pliers, and hold the crown high above a small flame in an alcohol lamp. The heating of the crown should be done with patience and caution since this is practically the only stage at which there is any considerable danger of cracking the crown. Move the cornucopia down very slowly toward the flame, until cornucopia and crown are red hot.

Have just at hand another alcohol lamp with a wick of the same diameter, but pulled up to give a flame about two inches high. When the crown is red hot, transfer to the larger flame and hold until the porcelain is biscuited. Do this where the air is sufficiently still to permit a steady flame. De Trey Porcelain Enamel is biscuited when the shadow passes off. Lay the cornucopia and the crown aside in the pliers in such way that the cornucopia will not come in contact with anything until the crown is cold, since contact at this time would surely chip the crown. This cooling will be a matter of five minutes. After the first biscuit the investment may be removed if desired.

When the crown is thoroughly cold, fill in the space made by the shrinkage with de Trey Porcelain Enamel of the desired shade, settle well to place, absorb the moisture with bibulous paper or dry porcelain powder and contour as desired. Heat the crown in the same careful manner as before, but carry this baking until de Trey Porcelain Enamel is glazed. When cold, observe whether any grinding is necessary to remove feather edges. If so, the grinding should be done before the matrix is removed. Polish the ground surface with cuttlefish disks. Remove the matrix and crown is ready to set.

When one has acquired the technic, a crown can be adapted in this manner in from thirty to forty-five minutes. The resulting joint is practically perfect.

If there is a very large space between the matrix and the crown, where a crown must be lengthened, three bakes may be required in which case the porcelain should not be glazed until the last bake.

Complete Technic Outfit.....	\$ 5.00
8 Bottle Outfit Complete.....	20.00
24 Bottle Outfit Complete.....	50.00

Sample and text book free on request.

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28 So. 40th Street

Philadelphia, Pa.

You can put

Solila Gold

in teeth too frail to stand
malleting;

in cavities with less under-
cut than foil requires;

in teeth where malleting
would cause great pain.

Solila Gold condenses perfectly with moder-
ate hand pressure. It makes a very dense,
strong filling of beautiful surface and color.

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Correct and fill in the coupon below and let us make
you a very liberal trial offer of this most excellent gold.

E. de Trey & Sons, 28 So. 40th St., Philadelphia, Pa.

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(have not) used Solila Gold. Make me that trial offer.

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How Somnoform Acts on the Pulse, Respiration and Blood Pressure.

We have reprinted from the *American Dental Journal* the results of exhaustive experiments with Somnoform, conducted in the Physiological laboratories of The University of Illinois, by impartial scientists.

During these experiments Chloride of Ethyl, Chloroform and Ether were also used. About 75 readings were made from animals and the series was concluded with experiments on one of the investigators.

Copiously illustrated with pictures of the apparatus used, sections of readings and pictures of experiments.

A postal request will bring a copy.
Ask for book No. 14.

E. DE TREY & SONS

28 South 40th Street

Philadelphia, Pa.

A New and Scientific Method of Measuring Twentieth Century Teeth, Crowns, Facings and Dentsply Facings.

**MORE ACCURATE AND CONVENIENT THAN ANY OTHER METHOD.
MAKES EXACT SELECTION AND ORDERING RAPID AND EASY.
MAKES BETTER PLATE WORK POSSIBLE.**

Selecting artificial teeth which meet all the requirements of a case has heretofore been tedious to dentists who have done it carefully. Many dentists have trusted to luck. And luck methods often produce unsatisfactory results.

There are at least six things a dentist should know about the teeth for any case, say a full upper. They are:

The length and width of the central.

The width of the six anteriors.

The distance from ridge to rest line at central.

The amount of vertical space above the ridge
which the bicuspid and molars require to
permit them to set in proper positions.

This is especially important in close bite cases.

What lower moulds articulate properly with

Heretofore there has been no simple method of getting this information.

**THE TWENTIETH CENTURY MOULD BOOK CONTAINS ALL THIS
AND MUCH OTHER INFORMATION READY FOR INSTANT USE.**

There is a definite reason why every Twentieth Century mould is as it is, why the outline is such and the varying proportions of bite, shut and ridge-lap are so. Often several moulds are alike in length and width but differ in outline and in bite and shut. These differences meet different mechanical requirements in plate making.

We want to enable you to take advantage of all the opportunities which Twentieth Century moulds offer. We want you to select quicker and better than ever before. We want you to be able to order just the mould you need with the knowledge that it will meet your requirements.

To make these things possible each Twentieth Century mould has

A New and Scientific Method of Measuring Twentieth Century Teeth.

(Continued)

been measured in millimeters. The resulting information is placed in the Twentieth Century Mould Book in such form as to be instantly available.

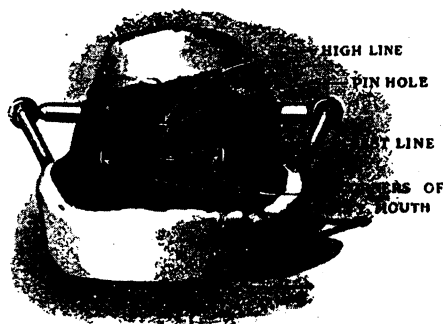
Here is a portion of one of the tables in the book:

TABLE OF MEDIUM LONG MOULDS.

(All measurements are in millimeters.)

Mould No.	*DIMENSIONS OF CENTRAL						Required vertical space 2nd bicuspid	Required vertical space 2nd molar	Width six anteriors	Width full 14	Articulates with lower moulds	Directions and cut on page
	Length	Width	Bite	Shut	Ridge-lap	Indicated distance from ridge to rest line						
20	10	7 1/3	2 1/2	2 1/2	5	5 1/2	5 1/2	5 3/4	41	103	11-53-1-5-24	51
88	10	7 1/3	4	2 1/2	3 1/2	7	5 1/2	5 1/2	42	105	9-3-2-24-70	76
5	10	7 1/2	3	3	4	6-7	5 1/2	5 1/2	41	102	2-3-21-53	45
6	10	7 1/2	3	2	5	5 1/2	5 1/2	5 1/2	42	103	21-3-53-9-8	46
72	10	7 1/2	3	3	4	6 1/2	5 1/2	5 1/2	44	112	72-73-43	75
23	10	7 1/2	3	3	4	6 1/2	6 1/2	5 3/4	43	106	40-5-65	52

With each copy of the Mould Book we shall furnish, free, a celluloid millimeter measure for measuring models and bites. This celluloid measure alone has on it much valuable information.



Mush bite trimmed to permit lips to lie in proper position A built-up bite is better

HOW TO LEARN WHAT A PARTICULAR CASE REQUIRES.

Take a wax bite Trim the bite in front so that the lips will close over it and lie at rest in the natural position This is very important The rest is easy if this is done right

(Continued on next page)

By mentioning the **AMERICAN DENTAL JOURNAL** when writing to Advertisers you will confer a favor upon both the Advertiser and the Journal.

A New and Scientific Method of Measuring Twentieth Century Teeth.

(Continued.)

With the bite in the mouth and the lips at rest, insert a thin blade instrument between the lips and make a horizontal mark on the wax. This is known as the rest line. It marks the edge of the upper lip when at rest. It is the line to which the cutting edges of the upper centrals should be set.

With the lips still at rest, insert the instrument and make a vertical mark at each corner of the mouth where the lips join. Do not draw the lips out of position.

Have the patient lift the upper lip as high as possible by the use of the elevator muscles. Make a horizontal mark at the edge of the lip when so raised. This is known as the "high line."

Put the bite on the model. Thrust a pin horizontally through the wax so that it will be just level with the top of the ridge. You can tell this by trying. Leave the pinhole.

WHAT THE MARKS MEAN.

The distance between the rest line and the high line is, in normal cases, the length of the central incisor, because when the lip and ridge are of about normal proportions that part of the plate exposed in laughing should be teeth. That is, the gum should not show, or should show but very little.

The distance between the pinhole and the rest line is the combined length of the shut and bite in the central of the desired mould. This provides for the pins to set on the ridge and the incisal edges come to the rest line. In the tables this measurement is known as "Indicated distance ridge to rest line."

The distance between the vertical marks at the corners of the mouth gives the combined widths of the six anteriors of the desired mould. This permits the distal angles of the cuspids to come at the corners of the mouth, just as nature places them

HOW TO USE THE MEASUREMENTS.

With the celluloid guide which accompanies each Twentieth Century Mould Book, get each of these measurements in millimeters.

Suppose the distance from the rest line to the high line is 10 mm. In the table where the plain upper moulds are grouped by length will be found 15 moulds in which the central is 10 mm long. They lie side by side for easy comparison. They are the only moulds among which we shall find the mould we want. There is no necessity to try a single tooth on wax or to wonder if any other mould will fit. Here is where we begin to save time.

A New and Scientific Method of Measuring Twentieth Century Teeth.
(Continued.)

Suppose the distance from the pinhole to the rest line to be $6\frac{1}{2}$ mm. Any mould having that measurement or one slightly less, in the column headed "Indicated distance ridge to rest line," will permit the pins to set on the ridge and bring the cutting edge at the rest line. Among the moulds just 10 mm. long, only 9 satisfy this requirement.

The field of our search has been contracted to 9 moulds with only moment's work.

Measuring between the vertical marks we learn the combined anteriors should be 41 mm wide. A glance at the column headed "Width combined anteriors" shows only four of the 9 mould shave just this width.

With the celluloid measure we determine on the model that the full 14 needs to be 102 mm wide to make the second molars come right. A glance at the moulds in the column headed "Width full 14" tells us that two of these moulds are within a millimeter

Turning to the illustration of these moulds on the page shown in the last column of the table we read the description, look at the outlines and select the mould best suited to the face

We have not needed to try a single tooth. We have glanced down a few tables conveniently arranged. **We have secured the one mould best suited to all the requirements of the case.** It has taken only three or four minutes. With practice it will be more rapid

It is now easy to take the desired mould from stock on hand or order by mould number **with the assurance of getting just what the case calls for.**

THE TWENTIETH CENTURY MOULD BOOK WILL BE ISSUED SOON.

It will be sent free on request, accompanied by a celluloid measure. If you want a coupon fill in the coupon below and mail to us.

THE DENTISTS' SUPPLY COMPANY,

47-61 West Forty-second St., New York.

I $\left\{ \begin{array}{l} \text{do} \\ \text{do not} \end{array} \right\}$ use Twentieth Century Teeth Please send me a

Twentieth Century Mould Book and Celluloid Measure.

**Nearly $\frac{1}{4}$ of your Vulcanite Teeth
free as compared with the
set-at-a-time price.**

If you will buy 116x14 Twentieth Century Teeth for cash it will give you nearly one-fourth of your teeth free as compared with the cost of the same teeth bought a set at a time. The figures are as follows: 116x14 a-set-at-a-time will cost you \$116. The same 116x14 bought at one time, for cash, will cost \$90. This means that you save \$26. on this purchase alone.

You run no risk. The teeth are exchangeable at any time for other shades and moulds and if you sell out or quit practice they will find a ready market at what they cost you.

If some other dentist is working a little cheaper than you, he may be making more from his practice because he may be buying this way. Having the teeth on hand to show, or try in, or make a plate while the patient waits may get him many a case you feel yourself entitled to.

You cannot afford to neglect such investments with such big profits. Let us send you through your dealer such a selection as you should have and begin saving that money now.

The Dentists' Supply Company, 47-61 West 42nd St., New York.

Gentlemen:—Send through my dealer

116 x 14 "Twentieth Century" Teeth Selected to give me the best possible service.

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New Face Pieces and Bags for Somnoform Inhalers Free with Somnoform

You may now keep your Somnoform Inhalers in the best possible condition without expense, on the following terms:

If you purchase one gross Somnoform capsules at one time, your dealer will give you, entirely free, a Somnoform bag and a face piece.

If you purchase half a gross Somnoform capsules at one time, your dealer will give you, entirely free, either a face piece or a bag.

These economies deserve your prompt action. All rubber goods deteriorate with age. The oxygen in the air attacks all rubber. You may now keep your inhaler always handsome and in perfect working condition without additional expense.

Send in your orders.

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Philadelphia, Pa.

Gentlemen: Send me through my dealer doz.
Somnoform capsules c.c. Send a new { face piece }
without additional charge. { bag }

When Ordering Plates, specify Twentieth Century Teeth.

Perhaps you prefer to have a laboratory make your plates. You should decide what make of teeth you desire, select the shade and mould and *specify them exactly to the laboratory.*

You should do this each time, carefully, because it is *your reputation* which is at stake in the plate. You are responsible for the appearance and service from the plate. To you the patient will look for its re-making if necessary. You will get the blame if it fails in any way.

Your chances that each plate will give perfect satisfaction will be greatly increased if you specify to the laboratory, for each plate, that it be made with Twentieth Century Teeth. The appearance will then be most natural, the correctness of the moulds will permit the best articulation and the strength of the porcelain will make breakages less likely.

All these advantages will cost you nothing extra. No teeth which ought to go on a plate cost less than Twentieth Century Teeth. Perhaps they cost less than the ones you are specifying. If you are not specifying any, they will be superior to what you are probably getting.

To make it easy for you to thus specify, we have prepared some stickers reading, "Make this plate with Twentieth Century Teeth, Mould....., Shade....." If you will use them, write "I'll use some stickers," and we'll keep you supplied.

The Dentists' Supply Company

47-61 WEST 42ND STREET, NEW YORK
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of. In justice to yourself you should know
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